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AUTHOR Dato, Daniel P.
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ABSTRACT

This project seeking to develop sound methodological research techniques for second-language is based on an initial pilot study which (1) identified and classifies the utterances of a child learning Spanish as a second language, and (2) determines whether there are any significant trends in the observed order of learning of kernels and transformed sentences. During a second year of research six children between five and six-and-a-half participated in an expanded version of the experiment concerning language acquisition which concentrated on the description and classification of the linguistic utterances produced by the subjects. Major chapters include: (1) introduction, (2) research design, (3) noun phrase, (4) verb phrase, (5) imperative, (6) interrogative, (7) sentence compounding and embedding, and (8) conclusions and implications. A bibliography and a list of linguistic diagrams are included. (RL)

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American Children's Acquisition of Spanish Syntax In the Madrid Environment: Preliminary Edition

Daniel P. Dato

Georgetown University

Washington, D. C.

May 1970

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T A B L E O F C O N T E N T S

		Page
LIST OF FIGURES		vii
PREFACE		ix
SUMMARY		xi
CHAPTER 1.	INTRODUCTION	1
1.1	Research problem	1
1.2	Rationale	2
1.3	Some related research	3
1.4	Significance of the study	5
1.5	Objectives of the study	5
CHAPTER 2.	RESEARCH DESIGN	7
2.1	Pilot study	7
2.11	Objectives	7
2.12	Methodology	7
2.121	The subject	7
2.122	Sampling techniques: time and situation	7
2.123	Transcription of language samples	8
2.13	Linguistic model	8
2.14	Linguistic analysis	9
2.15	Preliminary results	10
2.2	Group study	12
2.21	Methodology	12
2.211	The subjects	12
2.212	Sampling techniques	15
2.213	Transcription of language samples	16
2.22	Revised linguistic model for group study	16
2.23	Toward a psycholinguistic grammar	20
CHAPTER 3.	THE NOUN PHRASE	23
3.1	Structure of the noun phrase in adult Spanish	23
3.2	Development of the NP in Michael's Spanish	24
3.3	Discussion of the comparative development of the NP	39
3.31	Number of components in NP	41
3.32	Combination of components in NP	42
3.33	Positioning of components of NP	42
3.34	Complexity of components of NP	42
3.35	Hypothetical order of learning of NP structures	43

Page

7.31 Compounding 152
7.32 Embedding of infinitives 153
7.33 Embedding of relative clauses 155
7.34 Hypothetical order of learning of compounded and embedded sentences . 157

CHAPTER 8. CONCLUSIONS AND IMPLICATIONS 159
8.1 Research design 159
8.2 Summary of principal linguistic findings 160
8.21 The noun phrase 160
8.22 The verb phrase 161
8.23 The imperative 162
8.24 The interrogative 163
8.25 Compounded and embedded sentences . . 164
8.3 Hypothetical order of learning of structures 164
8.4 Research hypotheses 166
8.5 Theoretical implications 167
8.6 Suggested further research 169

BIBLIOGRAPHY 171

LIST OF FIGURES

No.	Title	Page
1.	Grammatical sentence types in pilot study	10
2.	Learning situations in the home and community	14
3.	Base rewriting rules posited for a description of adult Spanish	19
4.	First occurrences of various NP structures in all children	36
5.	Comparison of the observed order of occurrence of noun phrases	40
6.	First occurrences of various VP structures in all children	58
7.	Comparison of the observed order of occurrence of verb phrases	65
8.	Order of appearance of tenses	69
9.	Sequence of person-number markers	71
10.	First occurrences of various Imp structures in all children	82
11.	Comparison of the observed order of occurrence of imperatives	85
12.	KD Selection Rules posited for a description of adult Spanish	94
13.	First occurrences of various interrogative structures in all children	110
14.	Comparison of the observed order of occurrence of interrogatives	114
15.	Comparative order of occurrence of KD particles in all subjects	119

No.	Title	Page
16.	First occurrences of various compounded and embedded sentences in all children	147
17.	Comparison of the observed order of occurrence of compounded and embedded sentences	151
18.	Types of compounding	152
19.	Verb constructions used with embedded infinitives	153
20.	Sequence of embedded infinitive constructions	154
21.	Relators used in embedded clauses	156
22.	Comparative order of occurrence of relators in all subjects	156

P R E F A C E

Planning for this research began in the early 1960's, with the realization that if we are to understand second language learning more fully, it is essential to obtain empirical data from learners while they are becoming successful bilinguals. What more appropriate sources could there be for such data than highly motivated children faced with the necessity of talking with new friends in a strange language? Careful analysis of the process by which they acquire a second language must surely yield some of the answers we are searching for in our language teaching programs. Thus one of our early objectives for undertaking this investigation was to provide data that might be adapted for meaningful language programming in a more formal learning situation. We also hoped that our findings might have some implications of a theoretical nature.

Our research constitutes only an early phase of a long-range program which would hopefully result in the formulation of a model of language acquisition, or what might be called a psycholinguistic grammar. It is our wish that this ambitious goal be shared by other workers not only in linguistics and psychology, but also in such fields as anthropology, education, speech pathology, and sociolinguistics.

The research reported here has been long and difficult, especially during the first two years before obtaining financial support. Nonetheless, I derive deep personal satisfaction in thinking about the many fine people with whom I have worked, both in Spain and here in the United States. Certainly this study would not have been possible without their support, advice and hard work. With sincere appreciation, I wish to acknowledge the following persons for their assistance.

Mrs. Linda K. Utley not only helped with the descriptive and psycholinguistic aspects of the analysis, but also provided valuable editorial and clerical assistance and typed the manuscript.

Sister Mary Rimblas and Mr. José G. Mendoza, native speakers of Spanish, worked extensively with the data and, through many hours of stimulating discussion, contributed useful ideas based on their firm grasp of linguistic theory.

x / CHILDREN'S ACQUISITION OF SPANISH

During the data-collecting phase in Spain, Mr. Armando Ocano, Mrs. Rosa María López Canel, Miss Araceli Romera, Mr. Luis Maillo García, and Mr. Pablo Reconde showed great sensitivity in conducting the interviews with our subjects. Miss Katherine Zegarra provided excellent clerical assistance.

Of course, this study would not have been possible without the cooperation and enthusiasm of the parents who allowed their children to participate in this investigation. Especially to the children I extend many thanks. Michael, my own son and pilot subject, deserves special credit for the unique set of recordings that he has provided. In listening to them I cannot help but remember, often with sympathy, the many trials and moods he experienced.

Finally, I wish to express my gratitude to my wife, Mary Virginia Dato, who in her capacity as research associate, helped in the planning of the research, attended many interviews and spent countless hours making transcriptions of the recordings. Most of all I appreciate her understanding and constant moral support throughout this project.

Our children, Michael, Gina and Anna Maria, all provided inspiration for ever greater efforts.

While many individuals participated in the collection and treatment of the data, the responsibility for its interpretation rests solely with the writer.

Daniel P. Dato

Georgetown University
Washington, D. C.
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S U M M A R Y

Techniques similar to those used in native-language investigations have been applied to a study of the process by which several monolingual, American-English speaking children of two different age groups randomly learned Spanish while living in a natural environment, in Madrid during the period 1964-1966. The primary objectives of this research project were: (1) to develop effective techniques for describing and classifying the types of syntactic patterns found in our data; (2) to analyze the constituents of all types of utterances; and (3) to ascertain any significant trends in the order of learning.

A one-year pilot study conducted with a four-year-old child indicated certain trends in the order of appearance of grammatical structures, and enabled us to revise both our data-collecting techniques and our linguistic model. During the second year, a group study involved speech samples from four children, ages five and a half and six and a half, and the continuation of collection of data from our pilot subject. An important aspect of our research has been the comparison of findings on our six-year-old subjects with results obtained from a twenty-month sampling of a child beginning his Spanish at the age of four years, one month.

Using a transformational-generative model of grammar, we have been able to provide an effective description and classification of the utterances produced by our subjects. Concentrating on certain grammatical subsystems (noun phrases, verb phrases, imperatives, interrogatives, and compounded and embedded sentences), we have gained considerable insight into the process by which young children acquire linguistic competence in the learning of Spanish as a second language. Our findings indicate that second-language learning under certain environmental conditions follows a systematic pattern of development, forming a hierarchy of grammaticality. We observed a correspondence between descriptive linguistic theory and the actual utterances of our subjects, which suggests a psychological reality for the rules of transformational grammar. Furthermore, the underlying similarities in the data of both the six-year-old subjects and the four-year-old suggest the existence of psycholinguistic universals which comprise the learning strategy of all children within certain broad age limits, regardless of the specific age.

We recognize the need for more refined procedures for collecting and processing such large amounts of data, as well as certain limitations in the use of a transformational-generative model of grammar. Our study also points out the desirability of a great deal of further research in this area. If an analysis of the speech of a larger sampling of children of various ages reveals similar patterns in the acquisition of syntax, we may be able to formulate a valid theory for second-language learning. Furthermore, if a comparison of our results with similar data collected on the acquisition of Spanish as a native language reveals similar trends, we hope to gain a better understanding of the cognitive phenomena of language learning in general. In addition to these implications for learning theory, our study has more direct implications for the structuring of formal bilingual programs.

C H A P T E R 1

INTRODUCTION

1.1 Research problem

In recent years our understanding of children's first-language acquisition has grown considerably as a result of many psycholinguistic studies on widely divergent languages. Stated in terms of transformational grammar, findings in this type of investigation have shown that certain underlying structures and functions are present in many of the languages analyzed thus far (McNeill 1966, Slobin 1968). These encouraging results in the search for universals in native-language development have led us to explore the existence of similar phenomena in the learning of a second language.

At the outset we would certainly recognize some of the striking differences between these two learning situations. With a child's first language, linguistic expression is a totally new phenomenon for him. In learning a second language, a person already has control over a complex set of linguistic concepts that could significantly influence his learning. His motivation for learning a second language may be entirely different from that accompanying the acquisition of his first language. In the case of native-language development, unless there are biological or social abnormalities, language is learned by all children. In many instances, because of differing amounts of language contact and other variables, a second language may be learned very poorly or not at all despite considerable exposure. Some observers claim that for these and other reasons, second-language learning is a highly complex phenomenon accompanied by so many variables that this area of investigation cannot provide us with scientific knowledge concerning human behavior, as in the case of the inevitable, species-specific, process of first-language development. In this presentation we are taking the position that second-language learning research <u>can</u> be fruitful and that, under certain conditions, second-language learning will follow describable psycholinguistic patterns.

Research on second-language learning can be meaningful if we analyze the process by which learners become successful bilinguals in a natural environment. We are not primarily concerned here with the type of second-language learning

accomplished under conditions that prevail in most formal school situations, because learning under these circumstances would generally be strongly influenced by the particular teaching methods used. Although our findings may eventually have some application to this type of learning, we must emphasize that our investigation concerns second-language learning that is random in a natural foreign-language speaking environment, just as in the case of first-language learning. And since the process of second-language learning in adults is generally complicated by numerous variables accompanying the learning situation, it is essential to point out that our research relates to children whose linguistic experience is limited to their native language without any previous exposure to the language they are about to acquire. That children do indeed acquire a second language is borne out in the numerous accounts by parents visiting foreign countries for any extended period of time.

1.2 Rationale

Although many of the accounts by parents are unfortunately anecdotal, we know that children learn to speak a second language, and that they do so within a relatively short time. If we were to entertain the hypothesis that a second language is learned by a child in a manner not unlike that of acquiring his first language, then we should be able, within a relatively short time, to gain a great deal of insight into second-language learning. We may draw an analogy with the technique of time-lapse photography employed by the botanist who, when desirous of obtaining an overall picture of the process by which a plant develops, will photograph his plant periodically from the time of germination of the seed to the time of full bloom and then view all the photographs in quick succession as though they comprised a motion picture sequence. In similar fashion, if we were to place together several detailed linguistic analyses made on highly motivated children who are rapidly learning to communicate with their foreign playmates, we could then obtain a telescopic view of the process by which children become bilingual. As Leopold (1961:358) states:

> Bilingualism is such a wide-spread phenomenon in the world of language that it deserves to be studied exactly by linguists. In children's language learning it can be observed in a nascent state, with the detail of a slow-motion picture and the speed of a fast-motion picture.

Approaching this task in a manner similar to that of native-language investigations, we have studied the process by which several monolingual, American-English-speaking children of different ages randomly learned Spanish while living in a natural environment, in Madrid, during the period 1964-1966. Even if we take into account such phenomena as interference and carry-over from the first language, we can observe the development of second-language learning taking place in a fashion that is not only systematic but also highly accelerated.

1.3 Some related research

A review of the literature on bilingualism shows numerous accounts of single case studies or diaries, but does not reveal, to our knowledge, any controlled investigations into the acquisition of a second language by substantial numbers of pre-literate children. Some of the work done in this field is of outstanding quality because of its descriptive accuracy (e.g. Leopold 1939-1947). Unfortunately, much of this type of research has been done on individual children, who may or may not have been exceptional in their learning ability, and therefore does not permit us to make useful generalizations in the search for scientific explanation of second-language learning behavior. In some cases the results are questionable because the investigator depended upon the observations of linguistically untrained parents. Other studies are of limited value because they emphasize only certain aspects of language learning such as phonology, size of vocabulary or mean length of sentence. Still others have given no attention whatsoever to the influence of the interlocutors' speech and to other quantitative factors in the learner's environment. Most serious, perhaps, of all weaknesses is the failure to interpret the data in terms of modern linguistic theory.

Rather than attempt to review the vast literature on native-language learning, our purpose here will be to discuss a few of the studies that were helpful to us in designing our research in early 1964.

Brown's study (1957) of the child's understanding of English morphology represented new emphasis on children's language acquisition. It demonstrated the ability of children to apply generalized rules to 'words' (nonsense syllables) never encountered before. Child language was perceived not in terms of an adult model, but as a system which in many ways possesses rules and structures not found in adult language.

4 / CHILDREN'S ACQUISITION OF SPANISH

Working with subjects of various ages from pre-school age up, Berko (1958) tested for knowledge of morphological rules by means of nonsense words. Aside from methodological considerations, this study brought out the importance of the concept of rules in the area of children's language development. In a sense it related to the notion of competence on the morphological level, and had significant implications for later studies on the acquisition of syntax within the framework of transformational grammar.

The evidence that children have construction rules was extended to include the acquisition of syntax (Brown and Fraser, 1963). In their attempt to induce a grammar from a corpus, the investigators were greatly influenced by the work of structural linguists, but nonetheless they demonstrated a process by which children may generate early utterances from a limited number of grammatical rules and patterns.

Also in 1963, Fraser, Bellugi and Brown published an account of experiments in which they tested in twelve three-year-olds the relationship of imitation, comprehension and production by means of controlled stimuli. They hypothesized that some utterances are understood before any are produced, since children do respond with appropriate nonverbal responses to questions and commands. Using pictures to illustrate ten grammatical contrasts, they found that comprehension scored higher than production, indicating that children learn a great deal about referential patterning and stimulus control of grammatical forms before they actually produce the forms. By providing some empirical data on comprehension, the investigators brought into focus the relationship between the development of understanding in a child and his linguistic competence as interpreted by workers in the field of transformational grammar.

Menyuk (1963, 1964) found that a linguistic model based on transformational-generative grammar could be used successfully to describe children's acquisition of language. She found that all the basic structures in adult speech were also produced by children under the age of three, an indication of how early language is categorized and used in terms of grammatical rules. She also noted an important developmental trend, that there was an almost steady growth in the children's use of transformations as an increasingly older population was observed.

Guided by the studies mentioned above, as well as others which applied techniques of modern linguistics (Brown and

Berko 1961, Braine 1963, Brown and Bellugi 1964, Ervin 1964, and Brown and Fraser 1964), we have adopted certain methodological procedures for our own research on the learning of a second language. The work of Menyuk influenced the analysis and interpretation of the pilot phase of our research.

1.4 Significance of the study

One of the essential goals of our research is to describe second-language acquisition that is representative. While environmental factors have an important influence on the learner, it is not our purpose here to attempt the detailed examination of environment that such a study deserves. Rather, our principal objective has been essentially to describe and classify the syntactic patterns produced by children in their learning of Spanish as a second language. If we can demonstrate any significant similarity among children learning these structures, we would then have evidence for the existence of psycholinguistic universals which may very well constitute part of a systematic strategy common to young children acquiring a second language. The significance of this study lies in the fact that so little research of this kind has been conducted. There is a growing awareness that this type of research will be essential for a great deal of the future work in psycholinguistics and sociolinguistics.

1.5 Objectives of the study

The analysis and comparison of thousands of utterances produced by several children over an appreciable span of time would be an insuperable task unless we could abstract in some meaningful way from all the speech samples an underlying system of rules operating within the learners that account for the sentences they generate. In other words, we are faced with the task of describing the competence of our subjects, as differentiated from their performance. In an attempt to achieve these objectives, we tested the following hypotheses in our pilot study:

Hypothesis A—That the utterances of a child learning Spanish as a second language can be described within the framework of a transformational-generative model of grammar.

Hypothesis B—That there are significant trends in the order of learning of base and transformed structures.

Use of a transformational-generative description enabled us to set up the following hypotheses for our group study:

Hypothesis C--That there is a significant difference in the incidence of base and transformed structures in children's language behavior at different time intervals.

Hypothesis D--That there is no significant difference in the incidence of base and transformed structures from individual to individual in a homogeneous age sampling.

Because the results of our pilot study led us to revise our original linguistic model, there are actually two stages of transformational theory reflected in our analysis: an earlier version of transformational grammar based on the work of Chomsky (1957), Menyuk (1963, 1964), and Stockwell, Bowen and Martin (1965), which was used in a preliminary analysis of our pilot study; and a more recent version based on Chomsky (1965), Katz and Postal (1964), Stevens (1966), Falk (1968), and Jacobs and Rosenbaum (1968), which is the model adapted for the analysis of our group study. Although the results of the pilot study have been re-interpreted in terms of the later version of transformational grammar presented in this report, at this point we shall give a brief description of the earlier model so that we may follow more effectively the changes in research design from one phase of our investigation to the next.

C H A P T E R 2

RESEARCH DESIGN

2.1 Pilot study

2.11 Objectives

In the interest of developing sound methodological research techniques for second-language learning, we conducted a pilot study during the first academic year of our stay in Madrid.[1] Our primary objectives were: (a) to identify and classify the utterances of a child learning Spanish as a second language; and (b) to determine whether there are any significant trends in the observed order of learning of kernels and transformed sentences.

Our rationale was that of most pilot studies, i.e. to determine in a pragmatic manner the optimal techniques and model for conducting a larger study. The pilot study, although providing a great amount of useful data, brought to light various shortcomings both in the linguistic model used and in the research techniques employed. Discussion of these limitations will be found in Sections 2.21 and 2.22 of this report.

2.12 Methodology

2.121 The subject. The subject, son of the principal investigator, was four years, one month old and had no previous knowledge of Spanish when the family arrived in Madrid. The child had no speech defects, and was assumed to have at least an average IQ. Although Spanish was spoken in the home much of the time, no attempt as made to urge the child to speak Spanish or to teach him the language. It is difficult to state exactly the number of hours he was exposed to Spanish. Our estimate of the subject's contact with the language, both quantitatively and qualitatively, is summarized in Figure 2 (p. 14).

2.122 Sampling techniques: time and situation. So that we could maintain an accurate record of all speech samples for verification and discussion, we used only that data which we were able to record. The subject's speech was taped twenty times for about thirty to forty minutes each session over a period of ten months, in a variety of stimulus situations: (1) with Spanish peers, ages four to eight,

in supervised and unsupervised play both inside the home and outside; (2) with Spanish-speaking friends of parents; and (3) with a monolingual Spanish research assistant trained to elicit conversation by means of drawings, story-telling, and especially-structured questions.

In order to encourage the child to speak spontaneously without concerning himself about staying close to a microphone, a Vega transmitting microphone was placed around his body, allowing him to move around unencumbered by wires. The utterances he produced were picked up by a Vega radio receiver located in another room and were recorded on a tape recorder connected by means of a patch cord. In all recording sessions, the principal investigator or the research associate took detailed written notes on the verbal and nonverbal aspects of the situation.

2.123 Transcription of language samples. Transcriptions were made of the recordings with the help of the assistant who interviewed the subject. These transcriptions, together with our notes, helped considerably in the understanding of the utterances produced by the subject and by all other participants in the recording session. The transcriptions were then checked with the recordings and refined by the principal investigator. Since phonemic development was not a primary object of this study, transcriptions were generally made in conventional orthography, except where significant mispronunciations could be described only by phonetic notation.

2.13 Linguistic model

The description and classification of utterances in our pilot study was based on the model of Spanish used by Stockwell, Bowen and Martin (1965). This early model of transformational grammar had three levels of linguistic structure: a phrase structure level, a transformational level, and a morphological level. The phrase structure level involving the basic patterns or so-called kernels corresponded to simple, active, declarative sentences such as the following example taken from our corpus: Este es un dibujo 'This is a drawing.' At the transformational level were the transforms representing all other sentences that could be derived from the kernels. Thus, Este no es un dibujo 'This isn't a drawing' would be a negative transformation; Es un dibujo 'It's a drawing', a transformation omitting the subject; and ¿No es un dibujo? 'Isn't it a drawing?', a transformation which would not only involve omission of the subject and negation of the verb, but would also transform the original declarative sentence into a question.

At the morphological level were such structures as verb endings, noun plurals, and gender agreement in adjectives. These structures could be seen in an utterance like: Los soldados están muertos 'The soldiers are dead', in which the child must learn to apply a rule for pluralization to every word in the sentence. In this last level we analyzed only the morphological features, since the phonological aspects of grammar were not treated in this particular phase of our research.

2.14 Linguistic analysis

The criteria for selecting utterances for consideration in our study were intelligibility and spontaneity. Of the total output only those utterances which were inaudible, distorted by noise, or completely nonsensical were left unclassified. In dividing the flow of speech into separate utterances, we were guided generally by a prolonged pause, the termination of an intonation pattern, or a shift in speakers. We classified utterances as grammatical sentences if accepted by at least two educated native speakers of Castilian Spanish, and if they conformed to the standard Spanish grammars by R. Seco (1963) and Gili y Gaya (1961).

Other utterances judged unacceptable as standard Spanish were classified as restricted to the child's unique grammar (Menyuk, 1963). Restricted utterances could be considered grammatically unacceptable for a variety of reasons, often because it was difficult to determine exactly what the child had been trying to say. In those instances, however, where it was perfectly obvious what the child meant, we classified restricted utterances under those types which they most closely approximated. For example, the utterance esto para tí lacks a verb and in all probability was intended for Esto es para tí 'This is for you.' Likewise the restricted utterance ¿dónde está las piedras? lacks number agreement between the verb and the noun, in order to qualify as the grammatically acceptable interrogative transformation ¿Dónde están las piedras? 'Where are the stones?' Those restricted utterances which did not approximate any particular sentence type were analyzed only for recognizable constituents and treated at the morphological level of analysis. Also included at the morphological level were those utterances which, although incomplete sentences, might be considered acceptable fragments since they are commonly used even by speakers of standard Spanish. Besides the spontaneous output, there were many imitated utterances including repetitions requested by interlocutors as well as mimicking of the child's own accord. These utterances were classified

according to grammatical acceptability and were taken into consideration for our discussion on the order of learning.

In order to determine any significant trends in the chronological order of the learning of syntactic structures, we adopted in our pilot study the distinction between kernels and transforms to identify the various grammatical categories with which the child would generate new sentences as he learned Spanish. All grammatical utterances were analyzed in terms of their constituents and corresponding functions, and then classified as various types of Basic Sentence Patterns or Transformations. Another factor used to ascertain trends in the order of learning was the occurrence and frequency of utterances restricted to the grammar of the subject.

2.15 Preliminary results of the pilot study (Cf. Dato 1966.)

A complete inventory of grammatical sentence types produced by the child is presented in Figure 1. The notation system for the basic patterns at the phrase structure level is based on the one used by Stockwell, Bowen and Martin (1965). Some symbols, however, have been added for transformed sentences, all of which begin with lower case letters.

FIGURE 1. Grammatical sentence types in pilot study

Symbol	Phrase structure level: basic patterns
Ia	Noun Phrase:subject Verb Phrase:ser 'to be' Noun Phrase:predicate - Yo soy Cheyenne 'I'm Cheyenne.'
Ib	NP:subj VP:ser Adjective:pred - Ese libro es de Tintín 'That book is about Tintín.'
Id	NP:subj VP:estar Adj:pred - El dragón está muerto 'The dragon is dead.'
II	NP:subj VP(intransitive) - Mi mamá está hablando 'My mother is talking.'
IIIa	NP:subj VP(transitive) NP:direct object - Gina ha roto un castillo 'Gina has broken a castle.'
IIIaa	NP:subj Pronoun:DO or reflexive VP(trans) - La niña se cayó otra vez 'The girl fell down again.'

FIGURE 1--Continued

IVaa	NP:subj Pro:indirect object VP(trans) NP:DO - Y tú me das el avión 'And you give me the airplane.'
Vf	NP:subj VP(transitive with complement in form of infinitive) VP(infinitive) Complement - Tú sabes quitar eso 'You know how to take that off.'
Vg	NP:subj VP(intrans) relator que VP(inf) Comp - Tú tienes que subir a mi casa 'You have to come up to my house.'
Vh	NP:subj VP(intrans) preposition a VP(inf) Comp - Tú vas a cogerlo 'You're going to get it.'
VIa	HAY NP(indefinite) (Adverb) - Hay tres aquí 'There are three here.'

Symbol	Transformational level: transformed sentences
nVIa	Negative - No hay cuatro 'There are not four.'
y-nB	Yes-no question, regular word order - ¿Tú quieres la piedra también? 'You want the stone too?'
k-d	Question word - ¿Qué es una nube? 'What is a cloud?'
imp-ar	Imperative -ar verb - ¡Espera un momento! 'Wait a moment!'
imp/H	Hortatory imperative - ¡Vamos a dibujar! 'Let's draw.'
nomIIIa	Nominalization of subject - El mira 'He looks.'
proIIIa	Pronominalization of object - Pero el señor sólo tiene una 'But the man only has one.'

FIGURE 1--Continued

iIIIaa	Inversion - Y se cayó el dragón 'And the dragon fell down.'
oIIIaa	Subject omission - Sí, ya la veo 'Yes, I see it already.'
cp/IIIa/oIIIaa	Compound sentence - Yo tiro y se cae 'I throw and it falls down.'
cx/oIaADJcl	Complex sentence with adjective clause - Es una cosa que sale 'It's a thing that comes out.'
cx/nVfADVcl	Complex sentence with adverb clause - No se puede pasar porque está muerto 'He can't pass because he's dead.'

Although many of the sentence types listed by Stockwell, Bowen and Martin (1965) were not found in the child's output, those that did occur could be described within the framework of a transformational model. From a purely descriptive point of view, it was indeed possible to start with the basic patterns found in the corpus and, by applying certain rules, transform them into the other syntactic structures found in our data. On the basis of our preliminary findings, even though we did not find kernel sentences appearing consistently earlier than transforms in the data, we did nonetheless observe a systematic order of occurrence of various structures.

In addition to indicating certain significant trends in the order of learning syntactic structures, our pilot study provided us with an opportunity to develop techniques for research in children's second-language learning. After the completion of our pilot study, the next phase of our research was a group study in which we explored the existence of psycholinguistic universals in the process by which several children learned Spanish as a second language.

2.2 Group study

2.21 Methodology

2.211 The subjects. Our group study during the second year was designed to provide data which would represent the second-language-learning behavior of a particular age level. We chose six children (two boys and four girls) between the

ages of five and a half and six and a half because we wanted subjects who: (1) had reached the point where they had mastered the basic concepts of their native language--i.e. most of the phonemic contrasts, morphological endings, and major sentence patterns; and (2) were subject to a minimum of influence by the formal school situation and the written language. Our search for suitable subjects was at times discouraging, particularly since we tried to control certain variables like IQ, verbal ability, absence of speech defects, and socioeconomic and educational background. We also attempted to find subjects with no previous knowledge of Spanish whose parents were motivated to have their children exposed maximally to the new language and culture during their stay in Madrid. All subjects arrived in Spain at approximately the same time, but unfortunately two of the children left Madrid early in the year, reducing our sample to four six-year-olds.

Two of the children attended Spanish schools, while the other two were exposed to a bilingual program in which approximately thirty per cent of their school time was spent hearing and speaking Spanish. Through the regular use of questionnaires accompanying each recording session, it was estimated that each child spent approximately twenty to twenty-five hours per week communicating in Spanish, and as much as thirty to thirty-five additional hours listening to the language with varying degrees of interest and comprehension.

The question of motivation was difficult to determine. As indicated in Figure 2, learning was undoubtedly influenced by such factors as parental attitudes toward the Spanish language and culture; sibling configuration within the family; and personality traits of the subjects themselves, who related with varying degrees of enthusiasm to their peers, to the friends of the parents, and to the parents themselves. In an attempt to evaluate each of the learning situations, we devised the following scale:

1 - listened and responded with intense involvement;
2 - showed moderate interest and had some verbal interaction;
3 - produced little verbal response, displayed varying degrees of interest, mostly in answer to questions;
4 - showed passive listening with limited interest;
5 - indicated little or no interest, made no verbal response, showed little or no comprehension.

In Figure 2, the initials M, O, N, S, and C represent the first names of our subjects: Michael, Opal, Niki, Stan, and Carl.

FIGURE 2. Learning situations in the home and community

Situation	Average no. hours/week*					Evaluation
	M	O	N	S	C	
A. Home						
1) Children's friends	7	10	3	-**	-	1
2) Maid and other service people	3	-	1	5	14	1
3) TV	14	-	10	14	-	4
4) Radio	3	2	2	2	2	4 - 5
5) Parents' visitors	5	2	2	1	2	1 - 5
6) Interviewer	1	1	1	1	1	1 - 3
7) Telephone	-	1	-	-	-	2
8) Parents	2	1	1	-	-	1 - 5
B. Community						
1) School	5	40***	10	5	25	2 - 5
2) Transportation (school bus, taxi, etc.)	10	-	-	5	-	4 - 5
3) Friends	7	-	2	-	-	1

* Figures may overlap. For example, Michael's parents spoke to the children in Spanish only in the presence of Spanish speakers, such as the maid, friends, etc.

** A blank space with no figure indicates little or no time.

*** The case of Opal was unique since this total represents time spent in a school where she had her meals and participated in non-formal activities.

FIGURE 2—Continued

4)	Church	1	1	1	-	1	5
5)	Shops	2	2	-	-	1	2 - 5
6)	Restaurants, cafes	2	1	-	-	1	2 - 5
7)	Trips, amusements, vacations	3	5	2	1	-	1 - 5
Total number of hours		65	66	35	34	47	

2.212 Sampling techniques. Our pilot study served as an important methodological testing ground for the development of effective techniques to be used in this second phase of our research. Some of the eliciting techniques used in the pilot study had proved to be inadequate. For example, outdoor play often involved a good deal of shouting and movement, and was not especially conducive to verbal production. During the early months play with Spanish children in unsupervised situations resulted in little production on the part of the subject, with the more verbal Spanish children taking over the conversation. Much of the spontaneous speech sampled did not result in the kind of utterances desired to test our hypotheses. During the second year, our improved research techniques limited recordings to the following, more structured situations: (1) with a trained Spanish-speaking research assistant who elicited speech from children through the use of pictures, questions, word interrogation, and story-telling (Menyuk 1963); (2) supervised play indoors with one or two Spanish children participating in appropriate games (Brown and Fraser 1963). Some recordings were made of children engaging in free play, but with a supervisor nearby to stimulate conversation when necessary.

Our pilot study also indicated that there should be a larger number of recordings, at least one per week averaging about thirty minutes in length, beginning soon after the arrival of the children in the foreign environment. Although weekly samples were planned for our group study, only twenty to twenty-four recordings were made of each child over a ten-month period, averaging about one every two weeks for approximately thirty minutes each, to give us a total of about ten hours.

One of the major problems of the pilot study was the selection and training of Spanish fieldworkers. Selection in our case was limited by availability, as it was difficult to find research workers trained in both linguistics and research techniques. During the second stage of the research, interviewers were more carefully selected. We made an effort to improve data collecting techniques through discussions with our research assistants, but training was not adequate.

2.213 Transcription of language samples. As in the pilot study, transcriptions of the recordings were made in traditional orthography with the help of the assistant who interviewed the subject. Since the value of carefully made notes on the recording situation had been established, the principal investigator or the research associate again made written comments to be used later in understanding and interpreting the speech samples.

Utterances produced by the subjects were then analyzed according to our revised linguistic model of transformational-generative grammar.

2.22 Revised linguistic model for group study

In devising an appropriate model for the study of children's second-language learning, our principal aim has been descriptive and generative capability. Because of the limitations of the tripartite model of transformational grammar with its sharp distinction between kernels and transforms, it was often difficult to classify certain types of utterances recorded in our pilot study, and thereby adequately determine the order in which Spanish syntactic structures were learned. A distinction which our pilot study proved to be inadequate for describing language learning was that between grammatical utterances and those restricted to the child's own grammar (Menyuk 1963). To classify a child's utterances as non-grammatical because they are not acceptable to speakers of standard Spanish is to obscure significant relationships which may exist between the child's actual output and descriptive linguistic theory. What is required is a complete record of the child's utterances, including the various intermediate non-grammatical ones, up to the point where the acceptable standard sentence is ultimately achieved. A description of language development can be more complete if we account for <u>all</u> utterances. In fact, those utterances which are restricted to the child's own grammar are of particular interest for a developmental study because they provide us with insight concerning the hierarchy

of grammaticality through which the child goes when he is acquiring competence in a second language.

Therefore, our revised linguistic model has been designed to show as completely as possible the range of intermediate structures generated by each of a series of base and transformation rules necessary to produce actual sentences. We shall attempt to point out any possible relationship between these hypothetical intermediate strings and the child's actual utterances as he develops the ability to produce grammatical sentences. This type of grammar, which might be called a psycholinguistic grammar or language acquisition model, has as ultimate goals the description and the prediction of the sequence in which certain linguistic structures and functions are learned.

Before presenting our psycholinguistic analysis of the children's utterances, we shall give here a general description of transformational-generative grammar as it relates to the competence attributed to adult native speakers of Spanish. For more detailed explanations, see Chomsky (1965), Stevens (1966), Falk (1968), Jacobs and Rosenbaum (1968), and other works listed in our Bibliography.

The transformational-generative grammar consists of three major components: (1) the syntactic component, which contains all the information needed for the phonological and semantic interpretation of a particular sentence; (2) the phonological component, which determines the ultimate phonetic realization of a sentence generated by the syntactic rules; and (3) the semantic component, which interprets the meaning of the sentence. In the present study, we are concerned primarily with the syntactic component, which includes the base and transformational subcomponents. The base consists of: (a) a system of recursive rules that can generate an infinite number of a limited variety of base strings; and (b) a lexicon, a kind of 'internalized dictionary' representing a native speaker's intuitive knowledge of the idiosyncratic properties of words in his language. The transformational subcomponent consists of a complex set of rules involving insertions, deletions and other types of modifications operating on the base strings to generate actual sentences.

We may think of a grammar as being made up of two types of structures: (1) actual utterances or surface structures that speakers hear and produce in ordinary spoken communication, and (2) grammatical abstractions or deep structures which underlie the surface structures. The underlying deep

structures are a set of categories and relations with the information necessary, beyond the meanings of the individual lexical items, to interpret the overall meaning of a sentence and to understand and produce actual utterances. Surface structures may be derived from deep structures by means of transformational rules. The distinction between deep and surface structure is essential to the understanding of transformational grammar because it shows the relationship between structures which are intuitively felt and intended to be different, but which may not so appear in the surface structure. For example, the surface sentence 'Entertaining children can be tiresome' may have different interpretations depending on the underlying deep structures.

Since deep structures are not empirically observable, we must start from the surface structure and work backwards to hypothesize the deep structure and the intermediate transformations involved. Using a descriptive linguistic model based on the work of Chomsky (1965), Jacobs and Rosenbaum (1968), Stevens (1966), and Falk (1968), we have posited nine sentence rewriting rules for the base subcomponent of adult Spanish syntax (See Figure 3). In Figure 3 and throughout the remainder of this report, we have used the following standard symbols:

B	base rule
S	sentence
S'	embedded sentence
Neg	negative
Pre	pre-sentence constituent
NP	noun phrase
VP	verb phrase
Imp	imperative
Q	interrogative or question
Aux	auxiliary
Cop	copula
Pred	predicate
Adv	adverb
V	verb
T	tense
PPh	prepositional phrase
Prep	preposition
Det	determiner
Art	article
Dem	demonstrative
Poss	possessive
LAdj	limiting adjective

FIGURE 3. Base rewriting rules posited for a description of adult Spanish

B-1 S → (Pre) (Neg) NP VP

B-2 Pre → { Imp / Q }

B-3 VP → Aux [Cop { Pred / Adv / S' } / Verb (S') (NP)] (Adv)

B-4 Aux → T (ha- + -do) (está- + -ndo) (-haber)

B-5 T → { <Present> / <Preterite> / <Imperfect> }

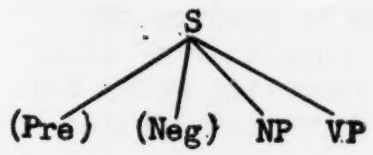
B-6 Pred → { NP (PPh) / (Adv) Adj (PPh) }

B-7 PPh → Prep NP

B-8 NP → (Det) N (S')

B-9 Det → { Art / Dem / Poss } (LAdj)

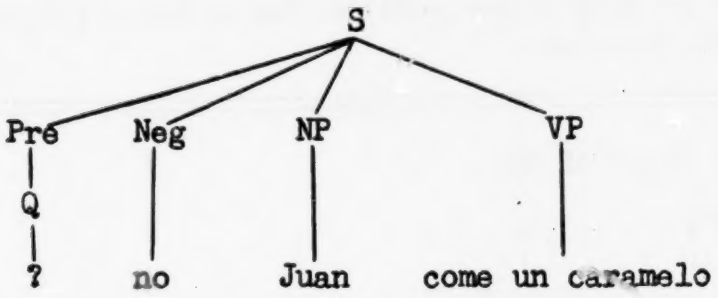
Rule B-1 states that a sentence is rewritten as a sequence of the constituents (Pre)[2], (Neg), NP, and VP. This may be represented by the following tree diagram:



Thus, a string like

¿Juan no come un caramelo? 'John isn't eating a candy?'

would be diagrammed:



For purposes of illustration and clarity, our examples show tree structures in which words and affixes have been inserted. Ordinarily, lexical items are not introduced until all the base rules have been applied.

Note that Rule B-1 contains two optional elements: the Pre-sentence and the Negative constituents (Falk 1968). The reason for separating Pre, which Rule B-2 rewrites as either Question or Imperative, from Neg is that negative imperatives occur in Spanish, but not imperative questions or questioned imperatives.

Rules B-3 through B-9 will be discussed in the appropriate sections of this report.

In addition to the sentence rewriting rules presented in Figure 3, the base subcomponent of a transformational grammar contains subcategorizational rules which rewrite major category symbols (N, V, etc.) as 'complex symbols' consisting of sets of binary syntactic features. Thus we find within the category N, for example, various subclasses which are common or proper, animate or inanimate, human or non-human, and so on. Since a discussion of these features is not necessary to the testing of our hypotheses, we shall mention them only briefly.

The base rules generate the deep structure, which is operated on by the transformational rules to produce the surface structure of a sentence. In the remainder of this report we shall concentrate on sentence rewriting rules B-1 through B-9, as well as on certain transformational rules applicable to our analysis.

2.23 Toward a psycholinguistic grammar

The rules we have posited for the competence of adult native speakers of Spanish are, of course, only hypothetical. How can we compare these rules with those used by a child in the process of learning Spanish as a second language? Aside from the phenomena of carry-over and inter-

ference from the native language, it is likely that the child's rules are not only fewer in number and of less complexity than the adult's, but also that the child is applying his rules in a sequence that is different from that of the adult. Furthermore, we would expect the child's earliest utterances to be those which happen to require the application of the fewest grammatical rules. The earliest utterances which are acceptable according to adult grammar would correspond roughly to the kernel sentences of earlier transformational theory; while those utterances generated in later stages of learning, involving rules of greater number and complexity, would correspond to what had been called transformed sentences. Since we consider both grammatically acceptable and non-acceptable utterances significant in the development of linguistic competence, the child's earliest utterances of any kind should correspond more closely to the adult speakers' underlying deep structures. Later utterances with more complex rules would relate to the adults' surface structures. As the child produces utterances that become increasingly complex, he passes through various levels of linguistic competence which may be described as comprising a hierarchy of grammaticality. Any correspondence between the utterances actually produced by children and the hypothetical intermediates in a purely descriptive linguistic model would substantiate the existence of a psycholinguistic process in the order of learning functions and structures.

Our intention here is not to present a complete grammatical description of competence and performance in the Spanish language, for such an undertaking would be far beyond the scope of this study. Instead, we shall examine certain syntactic aspects of some of the base constituents and grammatical subsystems, comparing our subjects' performance in these areas with the rules for syntactic competence proposed by transformational theorists. We shall attempt to relate certain base and transformational rules for Spanish with the psychological reality of the developmental process of language learning as demonstrated in the children's recorded utterances.

In studying the various grammatical subsystems, we shall first present a set of rules which we consider valid for adult Spanish, and then describe the processes which appear to operate in the children's grammar. We shall deal with the noun phrase and verb phrase constituents of the base, and then with the imperative, interrogative and embedding transformational subsystems of the grammar for the purpose of testing our hypotheses concerning the order of learning among our subjects.

In order to make an effective comparison of the order of learning in our subjects, we shall describe first how various elements emerge in the data of our most productive subject, Michael, and list structures with their significant functions and features in chronologically arranged charts at the end of each section. Included in our charts will be a summary of structures observed in the output of the other subjects.

Rather than attempt to describe the development of the various subsystems in terms of stages, we shall view it as a continuous process. The practice of setting up stages implies a fixed level of learning with a beginning and an end, whereas the notion of a continuum suggests a gradual learning process with new structures appearing as a result of a wide diversity of factors, both syntactic and semantic, many of which are still not clearly understood.

N O T E S

[1]The author was a Fulbright lecturer in Linguistics and English as a Foreign Language at the Facultad de Filosofía y Letras, Universidad de Madrid, from 1964 through 1966.

[2]Here we follow the convention of enclosing optional elements in parentheses.

C H A P T E R 3

THE NOUN PHRASE

3.1 Structure of the noun phrase in adult Spanish

We shall assume that the deep structure of every Spanish sentence consists of a noun phrase (NP) and a verb phrase (VP), even though both of these constituents may not appear in the surface structure. It is appropriate therefore to analyze in some detail the process by which these aspects of grammar develop in children's learning of Spanish as a second language.

In our treatment of the NP we shall use the phrase structure rule format to describe the various components of this constituent as they exist in adult Spanish and then indicate the order in which these components emerge in our data.

The model for the structure of the NP in Spanish may be written:

$$NP \longrightarrow (Det)\ N\ (S')$$

According to this rule the NP may consist of a single noun (N), or a combination of N with either one or both of the elements determiner (Det) and embedded sentence (S'). Det, which could be an article (rt), a demonstrative (Dem), or a possessive (Poss), may be optionally combined with a limiting adjective (LAdj):

$$Det \longrightarrow \left\{\begin{matrix} Art \\ Dem \\ Poss \end{matrix}\right\} (LAdj)$$

S' could be a noun modifier including a descriptive adjective, prepositional phrase, clause, or even a complete sentence. The NP may be preceded by a preposition or joined with other NP's with or without the use of conjunctions.

In our treatment of the NP in this study we shall consider the following elements:

N	noun
Art	article
Dem	demonstrative
Poss	possessive

Adj	descriptive adjective
LAdj	limiting adjective
Prep	preposition
PPh	prepositional phrase
Adv	adverb
Pro	pronominalization
S'	embedding

We shall demonstrate how each of these components occurs in various forms and combinations in the utterances of our subjects. Since embedded sentences will be analyzed extensively in a later section, they will only be mentioned here to demonstrate the developing complexity of the NP.

The NP has the following functions: subject, predicate, direct object, indirect object, and object of preposition. Although it is difficult at times to determine whether a particular NP was intended as a subject, predicate or other function, especially in the earliest samplings of Spanish, these functions will be stated where they are unambiguous and represent evidence relating to the chronological order of the learning of NP elements.

There is evidence that in many cases several subcategorizational features (See page 20) are learned at one time as the child acquires a particular vocabulary item. In other instances, only one or two of the features of a noun are learned. Since this aspect of language development is subject to the particular nouns relating to the referents encountered by a child, the chronological order of the learning of features inherent in nouns would be highly variable and unpredictable. In some instances a feature such as <human> may be observed specifically in constructions like:

Está buscando a Francisco. 'He's looking for Francisco.'

where the human direct object function requires the preposition a following the verb. In this discussion we shall treat only those features of nouns and determiners that are clearly observable in the syntactic structure of the NP.

3.2 Development of the NP in Michael's Spanish

3.201. In the first two recordings of Michael's Spanish, the NP appears mostly as an individual noun in utterances like:

Francisco	'Francis' (proper name)
pistola	'pistol'
barco	'boat'

which may be written in terms of the formula:

NP → N

3.202. Beginning complexity in NP structures is indicated by the insertion of Art, used even in front of words he doesn't know in Spanish:

un [ráy] (probably intended for 'a ride')
un pintar (probably intended for: una pintura 'a painting')

We also observe the use of Art in short phrases which may well have been learned as a single unit such as un momento 'a moment', meaning actually 'wait a minute.' Thus we may expand our rule as follows:

NP → Art N

Aside from the single occurrence of the definite article in el oso 'the bear', in the second recording, all other uses of the article are indefinite up to the fifth recording. Thus, Art may be symbolized as having the feature <Indef>. Although the child used the appropriate masculine form, un, in the examples shown above, his learning of the concept of gender will require considerable time, as we shall see later in our discussion.

3.203. During the early phase in the child's learning of Spanish we find utterances which may be interpreted as either a NP consisting of a demonstrative (Dem) plus N, or as a pivot-type construction similar to those discussed in recent native-language studies (McNeill 1966, Ingram 1968).

esto avión	'this airplane'
esa pistola	'that pistol'
este por aquí	'this here'
este ahí	'this there'

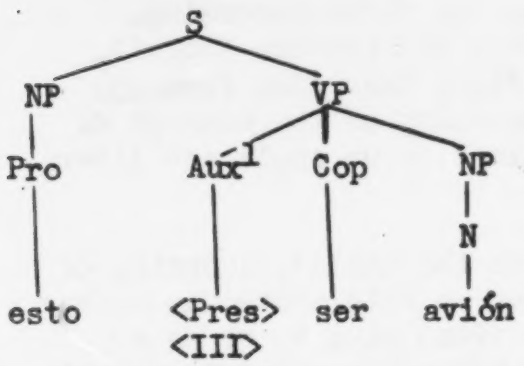
If we assume the child intended an utterance such as esto avión for Este avión es mío 'This airplane is mine', or for Quiero este avión 'I want this airplane', then we may interpret esto, esa, este, and ese as demonstratives and the entire utterances as NP's functioning either as subjects or direct objects.

If, on the other hand, we assume that a copula (Cop) was intended, we could then interpret the demonstratives esto, ésa, and éste as pronominalized subjects and consequently consider these utterances to be pivot-like constructions.

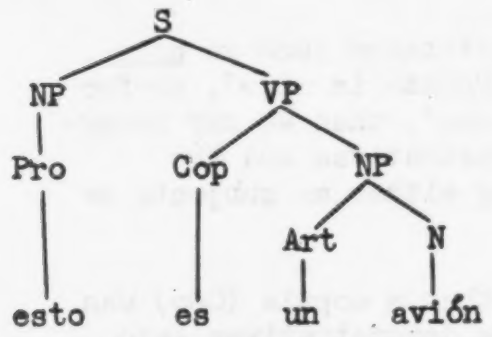
In the latter case, we would make the following interpretations:

esto avión (intended for: Esto es un avión.)	'This is an airplane.'
ésa pistola (intended for: Eso es una pistola.)	'That is a pistol.'
éste por aquí (intended for: Este está por aquí.)	'This is around here.'
éste ahí (intended for: Este está ahí.)	'This is here.'
Francisco, ésta para tí, ésta para ahí (intended for: Francisco, ésta es para tí y ésta la ponemos ahí.)	'Francis, this is for you, and this we'll put here.'

The deep structure of utterances like those cited above may be shown as follows:



which would undergo a series of transformations including the insertion of appropriate forms of Cop, es, and the article, un, giving the surface structure Esto es un avión 'This is an airplane.' This surface structure may be shown by a tree:



As a result of this interpretation of the NP as a pronominalized demonstrative, the NP structure may be written as follows:

NP → Dem (N)

3.204. During this same period we find the utterances:

dos pistolas	'two pistols'
las dos semanas	'the two weeks'

where we observe before the N the use of a limiting adjective (LAdj), defined as an adjective which relates the noun to its environment in terms of order relations, amount or quantity (Stockwell, Bowen and Martin 1965:88). Since the Art before LAdj appears to be voluntarily deletable, we may combine these structural features:

NP $\longrightarrow$ (Art) LAdj N

3.205. Also observed at this time is a construction involving conjoined NP's:

los ojos y las manos	'the eyes and the hands'

which may be described as:

NP $\longrightarrow$ Art N y Art N

Thus by the end of the fifth recording, Michael's competence to generate NP elements may be stated cumulatively with the rule:

$$NP \longrightarrow \left\{\begin{matrix}\text{Art}\\ \text{Dem}\end{matrix}\right\}(\text{LAdj})\ N\ (\text{y NP})$$

In reference to gender agreement within the NP, there is no indication that the child has learned this concept because of the indiscriminate use of the articles un and una in phrases like:

una libro (for: un libro)	'a book'
una teléfono (for: un teléfono)	'a telephone'

The noun function that predominates at this early stage is the predicate. The NP is also used as a subject, emerging generally in the form of a demonstrative, the N having been optionally deleted.

The Art at this time has the feature <Def> as in:

los ojos y las manos	'the eyes and the hands'

3.206. Recording number six is notable for the occurrence of several different prepositions:

cuatro a mí	'four for me'
por los caballos (for: para los caballos)	'for the horses'
de agua (in answer to: ¿un vaso de ...?	'of water'
de España	'from Spain'
en una ribro (for: en un libro)	'in a book'

The use of these prepositions may be interpreted as the creation of a prepositional phrase:

PPh ⟶ Prep NP

where:

Prep ⟶ de, a, por, en

3.207. The possessive determiner (Poss) is expressed in the phrase:

mi libro	'my book'

which may be formulated:

NP ⟶ Poss N

3.208. With this example we may also see a PPh used as a modifier of another NP:

¿los sellos de mi libro?	'the stamps from my book?'

Stating these structures together in a single rule, we have:

NP ⟶ NP PPh

We also note in this type of NP containing a Prep, the function object of preposition (OP).

3.209. In recordings 6, 7, and 8 we have the utterances:

la otra	'the other one'
la otra pequeña	'the other small one'
tienes mucho, ¿eh?	'you have a lot (of money), don't you?'
un grande	'a big one'

in which an optional deletion rule for the N is being applied. The structure of these NP's may be stated:

NP $\longrightarrow$ Art LAdj (N) Adj

3.210. In previous recordings we had descriptive adjectives coming before the noun, as in muy grande bota for bota muy grande 'very large boot' and es una larga cama for Es una cama grande 'It's a big bed.' In recordings 8, 9, and 10, we find indications of the child's awareness of the concept of the adjective placement rule in which descriptive adjectives generally follow the nouns they modify:

tengo un riblo español (for: Tengo un libro español.)	'I have a Spanish book.'
la dibujo grande (for: el dibujo grande)	'the big drawing'
puerta arriba muy grande	'very big door upstairs'
una mesa grande	'a big table'

The rule showing adjective placement may be stated:

NP $\longrightarrow$ Art N Adj

We still find, however, some cases of the adjective coming before N, which probably represent influence from the child's native English:

los grandes orejas (for: las orejas grandes)	'the big ears'
la grande papel (for: el papel grande)	'the large paper'

However, it is possible in standard Spanish, depending upon the specific meaning intended, to place descriptive adjectives before the noun. This may be done as the result of a transformation.

3.211. The adjective in Michael's NP's may also be modified by an adverb. Although we have one example of this type of construction earlier,

un muy grande bota (for: una bota muy grande)	'a very big boot'

it isn't until recording 10 that we find the modified adjective coming after the noun, as in:

puerta arriba muy grande	'very big door upstairs'

The use of an adverb such as muy to modify the adjective changes our rule as follows:

NP $\longrightarrow$ Art N Adv Adj

At this point, by the end of the tenth sampling of Michael's Spanish, we may summarize the cumulative structure of the NP with the following rule:

$$NP \longrightarrow \left\{\begin{bmatrix}(Art)\\(Dem)\\(Poss)\end{bmatrix}\right\} (LAdj)\ \ N\ \left\{\begin{bmatrix}(Adv)\\(PPh)\end{bmatrix}\right\} (Adj)$$

Although the data does not contain any examples of the NP with all of the components shown in our rule, we assume that the child has the competence to generate this type of structure. Later on we do in fact find all these elements used in a single NP structure.

In addition to the prepositions de, a, por, and en, we now have con and para, which may precede the entire NP.

We observe examples of nouns and pronouns functioning as subject:

Yo sabes esto cuenta (for: Yo sé este cuento.)	'I know this story.'
Gina ha roto un castillo.	'Gina has broken a castle.'

Gender agreement is still a problem, although we see indications that the child is gaining control over more nouns:

un/una casa	'a house'
una/un árbol	'a tree'
la niño (for: el niño)	'the boy'

but:

un castillo	'a castle'
una bandera	'a flag'

3.212. In recording eleven, we observe utterances in which the NP is modified by a relative clause:

la caballo que tienes (for: el caballo que tienes)	'the horse that you have'

which may be formulated as:

NP ⟶ Art N S'

The question of relative clauses will be discussed in terms of embedded sentences, which will be taken up in greater detail in Chapter 7. In the remainder of our discussion on NP's, we shall simply make mention of their occurrence.

Also in sampling eleven we find the possessive expressed in various persons, both singular and plural:

sus cosas	'his things'
a tu casa	'to your house'
en mi casa	'in my house'

More prepositions appear in recordings eleven and twelve:

castillo de arena	'sand castle'
un niño de corderos	'a boy who watches sheep'
a tu casa	'to your house'
para vino	'for wine'

At this time more examples of modified adjectives are observed, as in:

muy suave	'very soft'
muy malo	'very bad'
más bonita	'prettier'

where the adverb <u>más</u> is used for the first time in this type of construction.

At the same time there are indications of greater awareness of the notion of number agreement between nouns and their qualifiers. Some utterances, however, show inconsistencies:

se caen el dragones (for: Se caen los dragones.)	'The dragons fall down.'
de estones ... mucho, muchos (for: piedras ... muchas)	'stones ... lots of them'
las piedras está aquí (for: Las piedras están aquí.)	'The stones are here.'
Están muertos.	'They're dead.'
que no hay dragones	'that there aren't any dragons'

3.213. In the twelfth sampling we observe the use of a special type of limiting adjective, <u>todo</u>, which can precede

the entire NP:

todo los tigres (for: todos los tigres)	'all the tigers'
todos los dibujos	'all the drawings'
todo lo fuego (for: todo el fuego)	'all the fire'
está muerto en todas las partes	'he's dead in all places'

This construction may be formulated:

NP ⟶ <u>todo</u> Art N

3.214. We observe the use of a pronominalized adjective which may be followed by a PPh, as in:

un poco de éste	'a little of this'

This structure can be written:

NP ⟶ Art LAdj PPh

More embeddings are found at this point, some in the form of infinitives:

déjame scribir (for: Déjame escribir.)	'Let me write.'
no se puedo pasar (for: No se puede pasar.)	'You can't pass.'
papá dice es para escribir cuando tú vengas (for: Papá dice que es para escribir cuando tú vengas.)	'Papa says it's for writing whenever you come.'

In these constructions, Michael is using infinitives as nouns which may or may not be preceded by prepositions. In addition to infinitives following the preposition <u>para</u>, we have nouns and pronouns:

para vino	'for wine'
para escuela	'for school'
para tí	'for you'

We also find more pronominalized forms, as in:

eso es tuya (for: Esa es tuya.)	'That is yours.'
Este es mío.	'This is mine.'

In this utterance we may assume the child has optionally deleted a noun from a structure such as Este es mi libro 'This is my book', and then with a subsequent morphological rule generated the appropriate possessive form, mío.

In sampling thirteen we may observe the flexible use of limiting adjectives in the following utterances:

otra vez	'another time'
otro motor	'another motor'
¿Dónde está la otra?	'Where is the other one?'
Tú pintas otro aquí.	'You paint another one here.'
en otro sitio	'in another place'

We may credit the child with not only the competence to apply rules for gender and number agreement and for noun deletion, but also the ability to preface the entire construction containing a limiting adjective with a preposition.

In addition, he can use a preposition in combinations with the definite article el to form al and del, as in:

al colegio	'to (the) school'
se cayó de la ventana del colegio	'she fell from the school window'

In the following recording, fourteen, the NP shows a pronominalized LAdj indicating the deletion of a noun:

uno de esos	'one of those'

Observe in this example that the pronominalization involves the deletion of a count noun, whereas the utterance un poco de esto includes the pronominalization involving the deletion of a mass noun.

3.215. In this same sampling we also see more examples of an adverb used as a modifier of an adjective following the noun, as in:

cosas muy bonitas	'very pretty things'

In one utterance we find noun modifiers both preceding and following the noun simultaneously, as in:

un grande castillo muy alto (for: un castillo grande y muy alto)	'a very high big castle'

which may be written:

NP ⟶ Art LAdj N Adv Adj

During this period we find the indefinite article in the plural form used in the partitive sense:

jugar con unos niños	'play with some boys'

We may also observe at this time, in recordings fourteen, fifteen, and sixteen, more examples of embedded sentences:

un grande pedras que caía (for: una piedra grande que caía)	'a big stone that was falling'
ves la dibujo que pinto (for: Ves el dibujo que pinto.)	'You see the drawing I'm making.'
en un sitio donde se toma Coca Cola	'in a place where you drink Coca Cola'

3.216. Michael also uses infinitives followed by nouns, as in the utterances:

¿Quieres ver vaqueros?	'Do you want to see cowboys?'
Quiero ver vaqueros.	'I want to see cowboys.'

which may be written as follows:

NP ⟶ S'

In recordings seventeen through twenty-one Michael uses a preposition in front of conjoined NP's, such as:

con tancas y aviones (for: con tanques y aviones)	'with tanks and planes'

At this time new prepositions are observed:

hasta mi casa	'as far as my house'
hasta noche	'until night time'
hasta el luna (for: hasta la luna)	'as far as the moon'

We find a prepositional phrase which includes a limiting adjective:

por el otro lado	'on the other side'

Utterances that include limiting adjectives before the prepositional phrases are:

ninguno de los americanos	'none of the Americans'
millones de rifles	'millions of rifles'

There is also a prepositional phrase in which we may observe the optional deletion of a noun:

el primero de la clase	'the first in the class'

From this point on Michael joins together NP's that become more and more complex:

Luis con los indios y yo con los vaqueros	'Luis with the Indians and I with the cowboys'
Dame dos a mí y dos a tí.	'Give two to me and two to yourself.'
el sombrero y los plumos de indio	'the hat and the Indian feathers'
Yo tengo un coche y un camión y un caballo.	'I have a car and a truck and a horse.'

Further development takes place also in the production of NP's containing embedded sentences. A final structure that we shall treat in this section on the NP is an especially complex utterance found in recording thirty-two:

uno muy grande que tenía carne	'a very big one that had meat'

Stated in formal terms, we have:

$$NP \longrightarrow LAdj\ Adv\ Adj\ S'$$

The combined rule representing all the NP structures discussed thus far is:

$$NP \longrightarrow (Det)\ (LAdj)\ N \begin{bmatrix}(Adv)\\(PPh)\\(S')\end{bmatrix}\ (Adj)\ (\underline{y}\ NP)$$

We shall now summarize the various noun phrase structures treated in this section for the purpose of comparing the order of learning of Michael's output with that of the other subjects. We may show chronological order by numbering each of Michael's noun phrase structures to correspond with the paragraphs in our text which discuss these structures. In order to make a meaningful comparison of the development of the NP constituent among all our subjects, we have found it advantageous to characterize the structure rules listed in our charts as a few basic learning processes. In effect,

this characterization represents a further degree of abstraction of the structure rules which are, in turn, abstract descriptions of actual utterances. Those structures occurring in the speech samples of the other children but not in Michael's are added at the end of the chart in Figure 4. In this way we may obtain an overall perspective of the learning of noun phrase components among our subjects. While the actual number of the recording, indicated in parentheses after each example, is useful in giving us a general picture of the development of the noun phrase for each subject, it is not as significant as the observed chronological order of structures as they emerge in the recorded samples.

FIGURE 4. First occurrences of various NP structures in all children

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3.201 Single word

NP → N

M: caballo (1)
O: caballo (1)
N: perros (1)
S: puerta (1)
C: perro (1)

3.202 Creation of NP; Det N

NP → Art N

M: una caballo (2)
O: una caballo (1)
N: un niño (1)
S: una torre (1)
C: el gato (2)

3.203 Creation of NP; Det N

NP → Dem (N)

M: esto (2)
O: esta indio (1)
N: y esto (1)
S: esta vez (2)
C: este (4)

3.204 Creation of NP; LAdj N

NP ⟶ (Art) LAdj N

M: las dos semanas (5)
O: ¿más caballos? (1)
N: pequeños zorras (1)
S: mucho poquito español (1)
C: dos salchichas (16)

3.205 Compounding; NP y NP

Det N y Det N

M: los ojos y las manos (5)
O: dos muchachas y dos muchachos (11)
N: un gato y un perro (1)
S: la Niña, la Pinta y la Santa María (2)
C: uno perro y una gato (19)

3.206 Use of preposition with NP

PPh ⟶ Prep NP

M: en un libro (6)
O: en casa (3)
N: con los dos (1)
S: en la luna (1)
C: a la escuela (8)

3.207 Creation of NP; Poss N

NP ⟶ Poss N

M: mi libro (6)
O: mi mamá (2)
N: mi hermano (1)
S: mis zapatos (5)
C: mi gato (2)

3.208 NP plus modifying PPh

NP ⟶ NP PPh

M: los sellos de mi libro (6)
O: un beso a su mamá (5)
N: una casa de coches (4)
S: una estrella de Russian (5)
C: botella de vino (10)

3.209 Use of two elements before N; optional deletion of N

NP → Art LAdj (N) Adj

M: la otra pequeña
O: el otro (7)
N: otro roto (6)
S: un grande gato poquito (15)

3.210 Adjective postposition

NP → Art N Adj

M: la dibujo grande (9)
O: un lápiz negro (6)
N: un pato feo (4)
S: un castillo moro (13)

3.211 Adverb modifying adjective

NP → Art N Adv Adj

M: puerta arriba muy grande (10)
O: un plato muy grande (17)

3.212 Embedding: adjectival

NP → Art N S'

M: la caballo que tienes (11)
O: una gatitos que están en la cama (12)
N: una cosa que es azul (9)
S: el bajarillo que haces (18)
C: una niño que come bocadillo (17)

3.213 Use of <u>todo</u>

NP → <u>todo</u> Art N

M: todos los dibujos (12)
O: todo eso cosas (7)
N: todo el personas (18)
S: todo el libro (12)

3.214 Use of partitive mass noun

NP → (Art) LAdj PPh

M: un poco de éste (12)
O: un poquití así de arroz (4)
N: mucho más de estos (6)
S: uno de éste (5)

3.215 Modifiers both before and after N

NP $\longrightarrow$ Art LAdj N Adv Adj

M: un grande castillo muy alto (14)
S: un grande gato poquito (15)

3.216 Embedding: infinitive plus direct object

NP $\longrightarrow$ S'

M: Quiero ver vaqueros. (16)
O: No quiero hablar. (8)
S: Quieres ver a pájaros. (1)

3.217 Compounding postposition adjectives

NP $\longrightarrow$ Art N Adj y Adj

O: las niñas listas y buenas (11)

3.3 Discussion of the comparative development of the NP

Since it is difficult to abstract from Figure 4 any systematic pattern of learning, we present in Figure 5 a comparison of the observed order of occurrence of noun phrase structures in our subjects. Symbols used here are abbreviations of those appearing in Figure 4. Thus, 01 represents the structure previously symbolized 3.201. Unfortunately, because of wide variations among the children in the pace of learning, cross-column comparisons based on the actual recording number are not very useful. However, Figure 5 does allow us to see more clearly the order of appearance of NP structures for each child, thus enabling us to make certain meaningful comparisons in our discussion below.

The basic processes involved in the development of the NP constituent may be summarized in terms of the number, combination, positioning and complexity of its individual components. Our treatment here will be essentially syntactic but, where relevant, observations will also be made on morphological aspects of the NP.

The number of different noun phrase structures used by each subject is related to his overall productivity. Thus, Michael has sixteen; Opal, sixteen; Niki, fourteen; Stan, fourteen; and Carl, our least productive child, has only nine. The fact that all five children produce the first eight structures listed in Figure 4, and three children use

FIGURE 5. Comparison of the observed order of occurrence of noun phrases

Recording	M	O	N	S	C
1	01	01,02, 03,04	01,02,03, 04,05,06, 07,16	01,02, 04,06	01
2	02,03	07		03,05	02,07
3		06			
4		13	08,10		03
5	04,05	08		07,08,14	
6	06,07,08	09	09		
7		12,14	14,16		
8	09	16			06
9	10		12		
10	11				08
11	12	05,17			
12	13,14	11		13	
13				10	
14	15				
15				09,15	
16	16				04
17		10			12
18			13	12	
19					05

the first ten, leads us to hypothesize that all children learning a second language acquire these particular structures early.

3.31 Number of components in NP

Judging from the data found in the output of our pilot subject, as well as that of the four children analyzed in our group study, the NP first appears as a single form, usually a noun, e.g. caballo, perros, puerta, or a pronominalized form of a demonstrative such as esto, ésa. At approximately the same time or soon afterwards, there appear in the recorded samplings of four of the five children, NP's created by the combining of two words including a N preceded by one of four elements: Dem, Art, Poss, or LAdj, as in esta indio, mi libro, la casa, dos niña, ¿más caballos? Our limited data does not permit us in this discussion to state with certainty that these two-word utterances constitute a special stage of second-language learning in the same sense that pivot-like constructions may indicate a stage in native-language acquisition. We can assert, nevertheless, that there is a resemblance which should be investigated in subsequent studies. With two of the subjects, NP's of three or more words occur in the same recordings as the two-word constructions. In the other children, NP's with the larger number of components occur shortly afterwards. The longer NP with the third element added is generally the result of combining either the Dem, Art, or Poss with the LAdj and the N. The LAdj, which by definition must come before the N, may either precede or follow other elements classified under the symbol Det. Appearing generally first as a numeral, the LAdj may also be a word like otro, más, grande, or pequeño. The lexical item todo, which usually precedes the N, appears in the data of four out of five children only after the occurrence of other pre-noun elements of the NP. Increasing use of a larger number of the combinatory possibilities of the N and Det components is seen in subsequent recordings, and may be assumed to be an indication of developing linguistic competence. During the development of the structure Det N, we may observe even with the earliest one-word utterances the concept of pronominalization which is soon followed by the facile deletion of the N. The number of components of the NP increases when the learners use adjectives and other modifiers with the N, and when one NP is combined with another through the process of compounding, e.g. puerta arriba muy grande, un gato y un perro, la Niña, la Pinta y la Santa María.

3.32 Combination of components in NP

An early type of combining components in the NP is the compounding of the NP constituent, which all subjects achieve by means of the coordinate conjunction y. This type of conjoining may involve either nouns alone:

tancas y aviones

or NP's consisting of a N preceded by any of the Det elements:

dos muchachas y dos muchachos
uno perro y una gata

At times one or more of the modifying elements in the second NP may be deleted, as in:

las otras niñas y niños.

Another method of combining NP components relates to the use of prepositions, which begins early in all five of our subjects. In three cases out of five, the preposition appearing first was en: en un libro, en la luna, en casa. By using a preposition before a N or NP, the learner creates a PPh which, with further development, becomes embedded as a modifier of another NP: botella de vino, los sellos de mi libro, un beso a su mamá. The process of embedding, however, generally takes place after the child has learned the concept of placing certain forms of modification after the noun in Spanish.

3.33 Positioning of components of NP

Placement of adjectives and other types of modification following the N is observed in the data of four out of five children only after the development of that part of the NP involving the pre-position Det elements and the N. There are certain adjectives like grande and pequeño which may either precede or follow the N in standard adult Spanish, depending upon the meaning. However, we have no evidence that our subjects distinguish between the contrastive uses of preposition and postposition adjectives even after they have become aware of the general order of N followed by Adj in Spanish.

3.34 Complexity of components of NP

The development of postposition modifiers in the utterances of all children indicates a clear pattern of growth starting with single adjectives and becoming progressively

more complex as linguistic competence develops. After single adjectives which modify nouns, we find in this general order: adjectives with modifying adverbs, prepositional phrases, the compounding of adjectives, and the embedding of infinitives and relative clauses (e.g. un castillo moro, un plato muy grande, una casa de coches, las niñas listas y buenas, quiero ver vaqueros, uno muy grande que tenía carne). The ability to manipulate and combine these different types of modification indicates an advanced degree of linguistic competence.

3.35 Hypothetical order of learning of NP structures

In summary, we hypothesize that the order of learning is significantly consistent among our five subjects, with little difference between our six-year-old children and our four-year-old. A general sequence of rules may be outlined as follows:

(1) N

(2) Det N

(3) Det (LAdj) (N)

(4) NP y NP

(5) PPh

(6) N Adj

(7) N PPh

(8) N Adv Adj

(9) N S'

N O T E S

[1]For features of the Aux see Chapter 4.

C H A P T E R 4

THE VERB PHRASE

4.1 Structure of the VP in adult Spanish

In developing the following linguistic model for the Spanish VP, we have been guided mainly by the works of Stevens (1966) and Falk (1968).

$$VP \longrightarrow Aux \left\{ \begin{array}{l} Cop \left[\begin{array}{l} Pred \\ Adv \\ S' \end{array} \right] \\ V \ (S') \ (NP) \end{array} \right\} (Adv)$$

According to this rule, every sentence containing a VP in Spanish must have a component Aux followed either by Cop or another verb. Even though Aux may not be manifest as a separate structure in the actual utterance, there is in the deep structure some form of this component. For example, although there is no inflection in a form like <u>ven</u> 'come!', we assume that certain features such as <II> can be copied onto the Aux from the subject NP in the base. Because this element is present in all Spanish sentences, we shall go into some of the morphological aspects of Aux in order to relate it to Cop and other verbs, and thereby show more effectively the development of the VP. Our treatment of the VP in this section, however, will be mainly syntactic, and we shall describe the interaction of all components included in our formula above as they appear in the Spanish utterances of our subjects.

NP's, which have already been discussed in detail in the previous chapter, will be mentioned here only in connection with their interrelationship within the VP. The same treatment will be given to verb forms such as imperatives (Chapter 5) and infinitives, as well as other types of embeddings which will be studied in Chapter 7.

The elements comprising Aux may be represented as follows:

Aux $\longrightarrow$ T (ha- + -do) (está- + -ndo) (-haber)

where:

$$T \rightarrow \begin{bmatrix} \langle Present \rangle \\ \langle Preterite \rangle \\ \langle Imperfect \rangle \end{bmatrix}$$

and:

(1) the optional element (ha- + -do) expresses relevant anteriority, indicated <Anteriority>;

(2) (está- + -ndo) stands for explicit duration, stated as <Duration>; and

(3) (-haber) represents subsequence when suffixed to the V, and will be marked <Subsequence>.

Even utterances consisting of only a single form like mira 'look' or ven 'come' possess the marker T for present tense and second person singular. We may illustrate our formula with various combinations of the present tense form, third person singular, and the three optional modifications (1, 2, 3).

Tense	Optional modifications	Examples
<Pres>	+ 1	ha mirado
<Pres>	+ 2	está mirando
<Pres>	+ 3	mirará
<Pres>	+ 1 + 2	ha estado mirando
<Pres>	+ 1 + 3	habrá mirado
<Pres>	+ 2 + 3	estará mirando
<Pres>	+ 1 + 2 + 3	habrá estado mirando

Thus the three latter elements of relevant anteriority, explicit duration and subsequence serve as optional modifications of the obligatory tense marker. Aux therefore may be considered an underlying representation bearing a relation to the surface structure of even the simplest utterance.

Our discussion for the remainder of this section will be on the development of the VP components in our most productive subject, Michael, which will allow us then to compare the order of structures observed in his output with that of four other subjects.

4.2 Development of the VP in Michael's Spanish

4.201. The earliest verb phrases in Michael's Spanish are single imperative forms appearing in the very first recording:

¡Mira! 'Look!'
¡Ven! 'Come!'

Structurally this early sentence type may be represented as a simple verb phrase consisting of the elements:

VP → Aux V

4.202. Along with this structure rule, we are crediting the child with the feature:

<Imp>

(The development of imperative constructions will be discussed in Chapter 5.)

4.203. In recording two the VP is expanded to combine single imperative forms with adverbs:

Ven aquí. 'Come here.'
Mira así. 'Look this way.'

which may be written as the formula:

VP → Aux V Adv

4.204. We also find at this time an imperative form followed by an infinitive which, although lacking the required preposition, indicates an expansion of the VP:

ven pintar (for: Ven a pintar.) 'Come and paint.'

This structure represents one of the earliest forms of embedding, and may be written:

VP → Aux V S'

where S' is an infinitive. (S' will be treated in detail in Chapter 7.)

4.205. In recording three we find copula constructions in which the copula form is omitted:

esto avión (probably intended for: Esto es un avión.) 'This is an airplane.'

Structurally we may show this type of construction as:

S → NP (Aux Cop) NP

4.206. Occurring also in the third recording is an example of a construction in which the copula form is inserted:

es un pintar (for: Es una pintura.) 'It's a painting.'

This rule may be written:

S $\longrightarrow$ NP Aux Cop (Prep) NP

Because Michael has not yet differentiated the use of <u>es</u> and <u>está</u> before an adverb:

es ahí (For: Está ahí.) 'It's there.'

we do not credit him with the competence to produce adverbial constructions with the appropriate copula.

4.207. At this point we may give the child credit for using the present tense and the third person singular form of the verb, both of which we interpret as features of the Aux:

<Pres>
<III> (4.208)

4.209. Also in recording three we find the first appearance of verbs other than imperative and copula forms:

¿quieres ahí? (for: ¿Lo quieres ahí?) 'Do you want (it) here?'

which we may formulate:

VP $\longrightarrow$ Aux V (NP) (Adv)

4.210. At this point we may also credit the child with the feature for the second person singular:

<II>

In recordings four and five we find more copula constructions, now with NP structures that are more fully developed:

Es una flecha. 'It's an arrow.'
es uno scopeta (for: Es una escopeta.) 'It's a rifle.'
es una teléfono (for: Es un teléfono.) 'It's a telephone.'

Es papá. 'It's Papa.'
es una ribro (for: Es un libro.) 'It's a book.'

We may compare these utterances with the type in which the Cop is assumed to be deleted. (See discussion on pivot-like constructions in Section 3.203.)

Pivot-like constructions	Constructions with copula
este ahí	es ahí
esta para tí	Es para tí.
esa pistola	es uno scopeta
esto avión	Es una flecha.

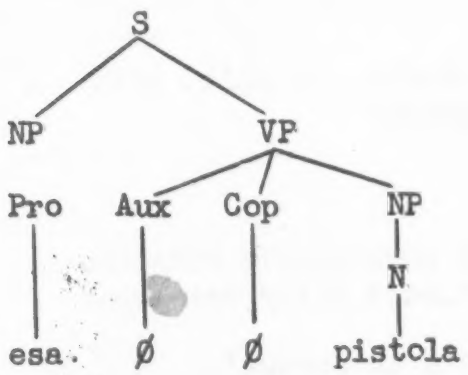
We may observe that where a pronominalized NP, esto, éste, ésa, is used as the subject, the Cop is not expressed in the utterance. On the other hand, in those utterances where the Cop is used, we find that the subject does not appear. This suggests that the child may be producing these two types of constructions in complementation with each other: when the subject NP is pronominalized, the Cop is omitted, as in ésta para tí (for Esta es para tí 'This is for you'), and when the Cop is expressed, as in Es para tí 'It's for you', the subject is deleted. Stated structurally, if the pronominalized noun phrase subject is expressed in a given string like:

S → NP (Aux Cop) NP

the Cop insertion rule would not apply. The child would therefore generate the surface structure:

esa pistola 'that pistol'

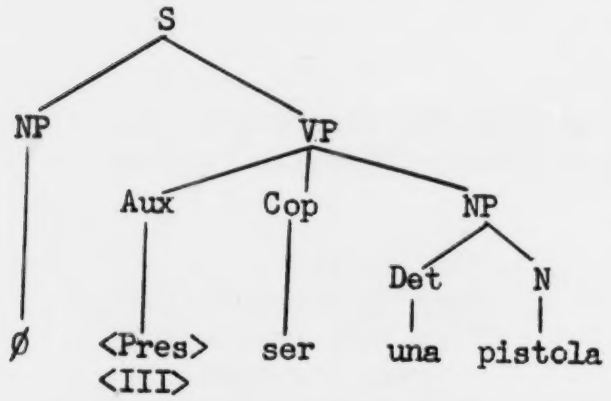
which may be shown as a tree:



If, on the other hand, the Cop insertion rule does apply, then the subject NP would be omitted, giving us presumably:

es pistola (for: Es una pistola.) 'It's a pistol.'
Es una flecha. 'It's an arrow.'

This type of utterance has the surface structure shown by the following tree:



4.211. In recording four we also find pivot constructions in which the pronominalized form is followed by a prepositional phrase, as in:

ésta para tí (for: Esta es para tí.) 'This is for you.'
ésta para ahí (for: Esta es para ahí.) 'This is for over there.'

This may be written as:

S $\longrightarrow$ NP (Aux Cop) PPh

By this time the VP is expanded to include the following components:

$$VP \longrightarrow Aux \begin{bmatrix} Cop & \begin{bmatrix} Pred \\ Adv \end{bmatrix} \\ V\ (S') \end{bmatrix} (Adv)$$

4.212. In the fourth recording we observe the use of the negative element no placed before nouns and other structures. This leads us to assume that Michael is capable of transforming an affirmative sentence into a negative one:

no lobo (probably for: No es un lobo.) 'It isn't a wolf.'
no diga (for: No lo digas.) 'Don't say (it).'

In terms of a structural rule we may write:

S $\longrightarrow$ Neg VP

4.213. In this recording we also find an example of the use of the impersonal form hay, as in:

No hay televisión. 'There's no television.'

which may be stated as a special form of V:

V ⟶ hay

4.214. In recording five we find the imperative construction expanded to include a direct object in various NP structures:

diga éste (for: Diga esto.)	'Say this.'
Diga 'sombrero'.	'Say "sombrero" (hat).'
Diga 'muy grande bota'.	'Say "muy grande bota" (very big boot).'
diga 'papel' entra de aquí (for: Di 'papel' dentro de aquí.)	'Say "papel" (paper) into this here.'

Structurally we have the rule:

VP ⟶ Aux V NP (Adv)

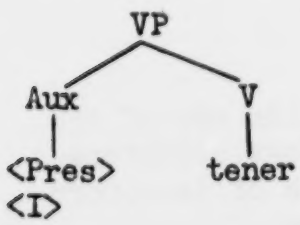
In recording six we find:

Tengo estos. 'I have these.'

This utterance contains a transitive verb and a direct object in the form of a pronominalization. To discriminate between this type of direct object and one involving a Det plus N, we formulate our rule as follows:

VP ⟶ Aux V (Pro)

To the Aux we may assign the features shown in this tree:



4.215. At this point we may give Michael credit for the first occurrence of the person feature:

<I>

4.216. Another indication of linguistic development is seen in recording six, where we also find the inversion of the direct object pronoun to contrast now with the utterance Tengo estos above, as in:

No lo tengo. 'I don't have it.'

This may be formulated as a transformation rule:

Neg	NP_1	Aux + V	NP_2	$\Longrightarrow$	Neg	Pro	Aux + V
no	yo	tengo	algo		No	lo	tengo
1	2	3	4		1	4	3

4.217. In the eighth recorded sampling, Michael shows he can use a more complex form of Aux, as in:

Gina ha roto un castillo.		'Gina has broken a castle.'
mira has hecho aquí (for: lo que has hecho aquí.)	Mira	'Look at what you've done here.'

These utterances indicate that Aux has acquired the following feature:

<Anteriority>

4.218. In the second of these two utterances, we have credited Michael with an embedding, even though he does not use the relator que. (For a discussion of this topic, see Chapter 7.)

VP $\longrightarrow$ Aux V S'

To represent the present perfect form of the verb in the deep structure, we use the present tense plus the modification showing relevant anteriority, <Anteriority>, which corresponds in the surface structure to the appropriate form of haber 'to have' plus -do, the suffix added to verbs to form the past participle. Thus termina- plus -do with the necessary shift in stress gives us terminado, which when preceded by the form of haber corresponding to the pronoun tú, gives us has terminado. In generating irregular forms like hecho 'made' and roto 'broken', we use transformation rules and the appropriate selection from the lexicon to derive ha roto and has hecho. The deep structure of Aux has now developed in complexity, with the following features accumulated:

Aux
 |
<Imp>
<II>
<Pres>
<III>
<hay>
<I>
<Anteriority>

4.219. In the eighth recording we also observe the use of the third person plural verb in a complex structure involving both a reflexive pronoun and an inversion of the subject NP to the end of the sentence:

se entran aquí lobos (for: 'Wolves come in here.'
Entran aquí lobos.)

Structurally this may be described as follows:

S $\longrightarrow$ Aux V Adv NP_1

4.220. In this utterance the verb is in the third person plural, which may be written as the feature:

<VI>

In recordings eight and nine, with utterances like:

Son malos.	'They are bad.'
Se caen.	'They fall down.'

Michael gives evidence of distinguishing the plural from the singular, since he has also used acceptably the constructions:

Es malo.	'It is bad.'
Se cae.	'He falls down.'

4.221. At this time we also find examples of the construction <u>ir a</u> plus the infinitive:

Vamos a ver.	'Let's see.'
Vamos a pintar.	'Let's paint.'

Structurally we may write:

VP $\longrightarrow$ Aux V Prep S'

where S' represents the infinitive as a type of embedding.

4.222. With the examples above we now credit Michael with the ability to use the first person plural form of the verb, which is expressed as the Aux feature:

<IV>

In recording nine we observe the embedding of an infinitive following the verb saber in a negative construction:

No sé escribir.	'I don't know how to write.'

4.223. In recording nine we also have evidence that Michael can now use the copula verb estar plus an adverbial. He still has difficulty, however, with the morphological concept of number agreement:

las espadas está aquí (for: Las espadas están aquí.)	'The swords are here.'

We may describe the syntactic construction as:

VP → Aux Cop Adv

4.224. In the eleventh recording we have utterances with an embedded adverbial clause:

cuando el toro ven, se cae caballo (for: Cuando viene el toro, se cae el caballo.)	'When the bull comes the horse falls down.'
cuando tú bajas a tu casa, yo baja contigo (for: Cuando tú bajes a tu casa, bajo contigo.)	'Whenever you go downstairs to your house, I'll go with you.'

Written as a structural rule, we have:

VP → Aux V cuando S'

where cuando may be considered a relator introducing a relative clause.

4.225. We also have the use of the relator que introducing an embedded noun clause:

No sé que dijo eso.	'I don't know what that said.'

The rule for this construction may now be written:

VP → (Neg) Aux V que S'

4.226. In addition to the preterite form dijo in the utterance cited above, we have the frequent use of another preterite, as in:

Se cayó el dragón. 'The dragon fell down.'

Although we cannot assume at this time that the child has the competence to use all preterite forms, we may nevertheless credit him with the preterite tense, stated as an Aux feature:

<Preterite>

4.227. In recorded sampling eleven we may also observe the development of the progressive form:

cuando está mirando 'when he is watching'
Está llorando. 'He is crying.'

We assign to Aux the feature of the progressive form, which we write as:

<Duration>

4.228. At this time we also find examples of constructions where the infinitive is preceded by a preposition:

Es para escribir. 'It's for writing.'

This rule may be written:

VP $\longrightarrow$ Aux Cop Prep S'

4.229. In recording thirteen we find the following utterances:

cuando éramos en el colegio otra vez ... (for: Cuando estábamos en el colegio otra vez ...) 'When we were in school again ...'
Era bonito. 'It was pretty.'

demonstrating that the imperfect tense is assigned as a feature of Aux:

<Imperfect>

At this point we may observe that the child now has all three tense features: <Pres>, <Preterite>, and <Imperfect>.

4.230. In recording fourteen we find an example of the construction tener que plus an infinitive:

tiene que scribir me (for: Tienes que escribirme.) 'You have to write to me.'

This rule may be written as an embedding:

VP $\longrightarrow$ Aux tener que S'

4.231. Recorded sampling seventeen and those following contain many examples of Michael's ability to use the subjunctive form of the verb:

¿Quieres que tire otro? 'Do you want me to shoot another?'

We shall simply account for the use of the subjunctive as a feature of Aux:

<Subjunctive>

4.232. Also in the seventeenth recording is the impersonal use of hacer:

Hace calor. 'It's warm.'

Structurally we may describe this use of hacer, found only in the third person singular, as a special form of V:

V $\longrightarrow$ hace

4.233. Recording eighteen contains an example of a complex imperative construction in which the plural direct object pronoun los now contrasts with all singular forms used previously:

Déjalos donde estaban. 'Leave them where they were.'

In this example we would like to point out the embedding of a relative clause introduced by donde, which may be formulated as:

VP $\longrightarrow$ Aux V Pro donde S'

4.234. In recording twenty-two we have utterances where both direct and indirect object pronouns are used:

Unos niños me lo rompieron. 'Some boys broke it on me.'

... que me lo van a quitar. '... that they're going to take it away from me.'

Structurally we may describe this type of utterance as follows:

VP $\longrightarrow$ Pro_1 Pro_2 Aux V

Also in recording twenty-two the past progressive construction can be seen with the use of the imperfect tense plus the progressive form of the verb (está- + -ndo), as in the following utterances:

Cuando estábamos subiendo las escaleras ... 'When we were climbing the stairs ...'
No estabas buscando éste. 'You weren't looking for this.'

This development may be stated in terms of a combination of features in the Aux:

<Imperfect>
<Duration>

4.235. In recordings twenty-eight through thirty we observe the first use of the future tense, expressing both probability, as in:

será un amigo de los (for: Será un amigo de ellos.) 'He must be a friend of theirs.'

and subsequence, as in:

Te lo enseñaré. 'I'll show it to you.'
Aquí lo pondré. 'I'll put it here.'
Yo te lo explicaré. 'I'll explain it to you.'

Structurally we may describe the future tense as a combination of the feature <Pres>, which we have already mentioned, and the new feature used in this utterance:

<Subsequence>

In recording thirty-eight, linguistic development is shown by the child's ability to distinguish between affirmative and negative commands:

Hazlo. 'Do it.'
no hagas (for: No lo hagas.) 'Don't do it.'

At this time we also find an example of the imperfect subjunctive:

si lo tuviera aquí, ponía (for: Si lo tuviera aquí, lo pondría.)	'If I had it here, I would place it.'

It is questionable, however, whether or not to attribute this feature to the child's competence at this time, since he gives evidence of still not being able to control the past subjunctive. In the following example he uses the imperfect tense instead:

Y después no quería que bajaba (for: ... bajara).	'And afterwards he didn't want me to go downstairs.'

In recordings forty through forty-nine, the last samplings taken of Michael's learning of Spanish, we find no new structures, but rather different person-number forms of verbs and tenses already used. This indicates greater control of concepts which had first appeared earlier. There is vacillation in the use of the subjunctive in constructions with antes que and cuando:

él va a venir cuando nos vamos a casa (for: El va a venir cuando nos vayamos a casa.)	'He's going to come whenever we go home.'
pero antes que me voy en la guerra ... (for: Pero antes que me vaya a la guerra ...)	'But before I go to war ...'
cuando sea mayor ...	'when I am older ...'

There are more occurrences of the imperfect tense, used this time in place of the conditional, as in polite requests:

¿me podía dar un caramelo? (for: Me podría dar un caramelo?)	'Could you give me a piece of candy?'

Here we may ask whether podía or podría constitutes acceptable speech on the part of the child, since many native speakers of standard Spanish substitute the imperfect form for the conditional. We must rule out any phonological error, since Michael is past the stage where the medial cluster /-dr-/ causes any difficulty. In any event, we do not credit the child with the competence to use the conditional, which would involve a combination of the Aux features <Imperfect> and <Subsequence>.

At this point we shall summarize the various verb features discussed in this presentation, and by assigning a symbol to each structure as found in Michael's output, we may then compare the order of learning of similar structures in our other subjects. As with the NP's, we present a brief characterization of each VP structure, the rule, and examples from each of the children who produced utterances of this type.

FIGURE 6. First occurrences of various VP structures in all children

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4.201 Single word

VP → Aux V

M: ¡Mira! (1)
O: ¡Mira! (1)
N: ¡Mira! (3)
S: ¡Mira! (1)
C: ¡Mira! (4)

4.202 Imperative

<Imp>

M: ¡Mira! (1)
O: ¡Mira! (1)
N: ¡Mira! (3)
S: ¡Mira! (1)
C: ¡Mira! (4)

4.203 Two-word VP, V plus Adv

VP → Aux V Adv

M: Ven aquí. (2)
O: Mira aquí. (1)
N: Mira ... ahora. (3)
C: Un avión es así. (11)

4.204 Verb plus infinitive

VP → Aux V S'

M: Ven pintar. (2)
O: ellas sabe estudiar mucho (7)
N: yo no sabe leer (4)
C: yo no quiere comer (19)

FIGURE 6—Continued

4.205 Pivot-like construction

S ⟶ NP (Aux Cop) NP

M: esto avión (3)
O: esta una niña y una niño (4)
S: esto tanque americano (7)
C: eso no indio (7)

4.206 Copula construction

S ⟶ (NP) Aux Cop (Prep) NP

M: es un pintar (3)
O: es caballo (1)
N: es una chiquitita (4)
S: ¿es en inglés? (1)
C: esto es una pez (12)

4.207 Present tense

<Pres>

M: es un pintar (3)
O: es caballo (1)
N: ¿No quieres uno más? (2)
S: no sabes piloto (1)
C: no ... es (4)

4.208 Third person singular

<III>

M: es un pintar (3)
O: es caballo (1)
N: Marcos es mi hermano. (1)
S: ¿es en inglés? (1)
C: no ... es (4)

4.209 Use of verb other than imperative or copula

VP ⟶ Aux V (NP) (Adv)

M: ¿quieres ahí? (3)
O: ¿Quieres ésta? (1)
N: ¿No quieres uno más? (2)
S: no sabes piloto (1)
C: yo quiero (4)

FIGURE 6—Continued

4.210 Second person singular

<II>

M: ¿quieres ahí? (3)
O: ¿Quieres ésta? (1)
N: ¿No quieres uno más? (2)
S: Tú eres un moro. (14)

4.211 Implied copula plus Adv (PPh)

S ⟶ NP (Aux Cop) PPh

M: ésta para tí (4)
O: ésta en casa (4)
N: esta madre aquí (4)

4.212 Negative VP construction

S ⟶ Neg VP

M: no diga (4)
N: no llores (12)

4.213 Use of impersonal hay

V ⟶ hay

M: No hay televisión. (4)
O: Hay nadie. (11)
N: yo sabe que hay (4)

4.214 Imperative with NP direct object plus adverbial

VP ⟶ Aux V NP (Adv)

M: diga 'papel' entra de aquí (5)
S: Mira mis zapatos aquí. (5)

4.215 First person singular

<I>

M: Tengo estos. (6)
O: No tengo medecino. (2)
N: No sé. (1)
S: hago aquí (4)
C: yo quiero (4)

FIGURE 6—Continued

4.216 Use of direct object pronoun, with inversion

(Neg) (NP_1) Aux V NP_2 ⟹ (Neg) Pro Aux V

M: No lo tengo. (6)
O: No lo entiendo. (6)

4.217 Present perfect; relevant anteriority

<Anteriority>

M: mira has hecho aquí (8)
O: que yo he dicho que no (11)
N: yo ha hecho esto (8)

4.218 Embedding of noun clause without the appropriate relator

VP ⟶ Aux V S'

M: mira has hecho aquí (8)

4.219 Inversion of subject and verb

S ⟶ Aux V Adv NP_1

M: Se entran aquí lobos. (8)
O: Yo me voy porque está mi mamá. (13)
S: ¿Qué es esto que hace tu zapato? (11)

4.220 Third person plural

<VI>

M: Se entran aquí lobos. (8)
O: Están echando agua. (12)
N: Ahora no tienen la pelota. (3)
S: ¿Dónde están mis zapatos? (5)
C: Yo no sé que hacen. (18)

4.221 Use of preposition plus infinitive

VP ⟶ Aux V Prep S'

M: Vamos a pintar. (8)
O: la niñas y niños vas a tocar guitarra (7)
N: yo vas a escribir (5)
S: Vamos a cortar una torre. (5)

FIGURE 6--Continued

4.222 First person plural

<IV>

M: Vamos a pintar. (8)
O: jugamos colegio, colegio (13)
S: vamos (5)

4.223 Copula estar plus adverb

VP → Aux Cop Adv

M: las espadas está aquí (9)
O: Está en casa. (4)
N: No está así. (6)
S: Está aquí. (12)

4.224 Embedding with cuando

VP → Aux V cuando S'

M: cuando el toro ven, se cae caballo (11)
O: cuando las niñas ensucian el suelo (10)
N: cuando cayó en la agua (5)

4.225 Embedding using que

VP → (Neg) Aux V que S'

M: no sé que dijo eso (11)
O: no entiendo que no se lo digo (11)
N: yo sabe que es (2)
S: ¿Qué es esto que hace tu zapato? (11)
C: Yo no sé que hace. (17)

4.226 Preterite tense

<Preterite>

M: Se cayó el dragón. (11)
O: no le sirvió de nada (15)
N: cuando cayó en la agua (5)

4.227 Present progressive; duration

<Duration>

M: Está llorando. (11)

FIGURE 6--Continued

O: Me están esperando. (8)
N: cuando el profesor es hasendo uno, dos (5)
S: la silla del otro avión está cayeno (17)

4.228 Embedding preceded by preposition

VP → Aux Cop Prep S'

M: Es para escribir. (11)

4.229 Imperfect tense

<Imperfect>

M: Era bonito. (13)
O: Yo así lo hacía. (6)
N: cuando yo estaba durmiendo (16)

4.230 Use of tener que plus infinitive

VP → Aux tener que S'

M: tiene que scribir me (14)
O: es que tengo que hacer (19)

4.231 Subjunctive

<Subjunctive>

M: ¿Quieres que tire otro? (17)
O: cuando yo haga así (16)
N: yo quiero es que sean las siete y media (12)

4.232 Impersonal hace

V → hace

M: Hace calor. (17)

4.233 Embedding using donde

VP → Aux V Pro donde S'

M: Déjalos donde estaban. (18)
O: los otros señores vas a donde quiere (8)
N: tú no sabes donde vas (13)

FIGURE 6—Continued

4.234 Use of both direct and indirect object pronouns

VP $\longrightarrow$ Pro_1 Pro_2 Aux V

M: Unos niños me lo rompieron. (22)
O: no entiendo que no se lo digo (11)

4.235 Future tense; subsequence

<Subsequence>

M: Te lo enseñaré. (28)
O: yo vendrá a cosas para poner vestidos (13)
S: yo abraré la ventana (17)

4.236 Second person plural

<V>

O: si sois mala, quitamos los caramelos (22)

4.3 Discussion of the comparative development of the VP

In Figure 7 we present a comparison of the observed order of occurrence of verb phrase structures in our children. The symbols used in this chart are abbreviations of those used in Figure 6, and also relate to the paragraph numbers in this chapter which discuss the structures in question. Thus, 01 in Figure 7 represents the structure symbolized 4.201 in Figure 6.

As in the comparison of NP development in all our subjects, we will analyze the learning of the VP in terms of the number, combination, and complexity of its components. Verb phrase construction will be considered essentially from a syntactic point of view, but we shall also indicate such morphological features as person-number markers and tense inflections, to show in greater detail how a child's usage becomes more complex. In addition, we shall point out as indices of linguistic maturation specific phenomena such as the use of the copula, embedding of infinitives and clauses, the manipulation of pronouns, and the subjunctive. Finally, at the close of our discussion, we shall present a hypothetical sequencing of structures and features which may be suggested as a basis for our model of second-language learning. Such a hypothetical model, of course, is only tentative and subject to modification upon the analysis of more data.

FIGURE 7. Comparison of the observed order of occurrence of verb phrases

Recording	M	O	N	S	C
1	01,02	01,02, 03,06, 07,08, 09,10	07,08, 15	01,02, 06,07, 08,09	
2	03,04	15	10,25		
3	05,06, 07,08, 09,10		01,02, 03,20		
4	11,12, 13	05,11, 23	04,06, 13	15	01,02, 07,08, 09,15
5	14		21,24, 26,27	14,20, 21,22	
6	15,16	16,29	23		
7		04,21		05	05
8	17,18, 19,20, 21,22	27,33	17		
9	23		16		
10		24			
11	24,25, 26,27, 28	13,17, 25,34	34	19,25	03
12		20	12,31	23	06
13	29	19,22, 35	33		
14	30			10	

FIGURE 7--Continued

Recording	M	O	N	S	C
15		26			
16		31	29		
17	31,32			27,35	25
18	33				20
19		30			04
20					
21					
22	34	36			
•					
•					
•					
28	35				

4.31 Number of components in VP

As with the NP, there is a high correlation between the number of VP structures and the overall productivity of the child. Analysis of the utterances of all our subjects indicates that the earliest verb phrases are single verb forms, generally imperatives such as mira, ven, toma. These imperatives then develop into two- and three-word constructions containing adverbs, NP direct objects, and in one child, an infinitive: ven aquí, mira ahora, diga éste, ven pintar, dame todos, mira casa. The imperative construction is extended by the addition of the negative element early in the data of some of the children, but the morphological endings are inappropriate. (For a more detailed treatment of imperatives, see Chapter 5.)

In addition to imperative forms, the early pivot-like utterances of two and three words also contain the undifferentiated copula form es followed by NP's, adjectivals, and adverbs: es caballo, es un pintar, es para tí, es aquí, es ahí. Three of the five children are using es where está

is needed, and it isn't until several recordings later that the distinction is made between the two copula forms. This suggests that es is adopted as an all-purpose form during the period before the es/está distinction is fully learned. As we shall see in our discussion on morphological aspects of the VP, person inflections other than the third singular forms of the copula are used somewhat later. Some of the children produce copula constructions omitting the NP subject, while at the same time they also produce pivot-like utterances where the subject is included but the copula is omitted.

It is difficult to determine a clear sequence in the learning of these structures; the data of two children suggests that the pivot is used first, then the copula. In the other three subjects' data, however, utterances show the co-existence of both types of constructions. One possible interpretation of the co-existence of copula use and pivot use during the early stages is some type of complementary distribution. (For more discussion on this topic, see Chapter 3.)

Occurrences of non-imperative constructions containing verbs other than the copula are observed in the data of all children by the fourth recorded sampling: ¿quieres ahí?, yo sabe, no sé, vamos a cortar, yo quiero. As in the case of the imperative and the copula, other verbs are used in constructions involving the same number of VP components including NP, adjectival and adverbial complements.

A further addition made to the VP structure from the very beginning is the negative element: no lobo, no sé, no hay televisión. These negatives are found in the utterances of all children and apparently cause little difficulty, at least from a syntactic point of view. In one instance word order constitutes a problem when a child produces es no un perro. This may be interpreted as interference from English or a possible intermediate construction.

4.32 Combination of components of VP

Our discussion of the combinatory possibilities of VP elements includes also a brief comment on positioning. The element varied most in the utterances of the children is the adverb, which, as in the case of adult Spanish, may be found in any position and in combination with any number of other VP components, even in constructions of only one or two other words: Ven aquí, Ahora no hay televisión, este ahí, Se entran aquí lobos.

Variations in the combining of VP components may be seen in the use of pronouns, especially those used as direct and indirect objects. The positioning of direct object pronouns before the verb is observed in the data of two subjects: No lo tengo 'I don't have it', Yo así lo hacía 'I did it this way', No lo entiendo 'I don't understand it', all examples occurring before the ninth recording. The pronoun used in most cases is lo. Other children produce utterances in which the pronouns are attached to imperative forms. At first we find constructions like Déjalo 'Leave it', Dámelo 'Give it to me' with no person-number agreement between the pronoun and its antecedent. This suggests that these early constructions, although containing one and sometimes two pronouns, are learned as a complete unit. Later on, when we find examples with variations in number and gender, we may attribute to the learner an awareness of the function of the pronoun: Déjala 'Leave it', Déjalos donde estaban 'Leave them where they were.' Combinations of both direct and indirect object pronouns are found very late in the data of three of the children, in two not at all. Utterances Unos niños me lo rompieron 'Some boys broke it on me' and No se lo digo 'I don't tell it to him' indicate an advanced degree of linguistic competence, and are accompanied by inconsistency even in the final recorded samplings of our study. A great deal of vacillation is also seen in the use of reflexive pronouns: El caballo se cayó 'The horse fell down', but un coche se mata (intended for: Un coche la mata 'A car kills her').

4.33 Complexity of components in VP

Complexity of the VP may be observed in the embellishment of the modifiers and complements relating to Cop or V, and by such morphological aspects as person-number and tense markers. Complements of V appear in their simplest form as individual nouns or adverbs, then as phrases, and later as infinitives and complete relative clauses embedded within the VP. This sequence of structures appears to be generally true in the data of all our subjects. The direct object component also becomes more complex with each recorded sampling, as observed in our discussion on NP in Chapter 3. The embedding of infinitives and clauses, which is a significant index of developing linguistic competence, will be treated more extensively in Chapter 7.

Increasing complexity of the Aux constituent may be observed in the development of morphological aspects such as tense and person-number. The order of appearance of the various tenses in the data of each of our subjects is shown

in Figure 8. The following tense abbreviations are used:

Pres	Present
ir a	Periphrastic future
Pres Perf	Present perfect
Pret	Preterite
Pres Prog	Present progressive
Imperf	Imperfect
Pres Subj	Present subjunctive
Past Subj	Past subjunctive

Where two or more constructions appear in the same recording, they are listed as having the same order of occurrence; e.g. Michael's first use of the periphrastic future and the present perfect tenses come in recording eight, so both are listed as being second in order of tense occurrence for this subject.

FIGURE 8. Order of appearance of tenses

Order	Michael	Opal	Niki	Stan	Carl
1st	Pres	Pres	Pres	Pres	Pres
2nd	ir a Pres Perf	Imperf	ir a Pret Pres Prog	ir a	
3rd	Pret Pres Prog	ir a	Pres Perf	Pres Prog Future	
4th	Imperf	Pres Prog	Pres Subj		
5th	Pres Subj	Pres Perf	Imperf		
6th	Future	Future			
7th	Past Subj	Pret			
8th		Pres Subj			

The earliest verb forms following or occurring along with the imperative are in the present indicative tense, first appearing with the copula, then with other verbs:

es caballo (for: Es un caballo.)	'It's a horse.'
esto es una pez (for: Esto es un pez.)	'This is a fish.'

¿Quieres ésta?	'Do you want this one?'
¿No quieres uno más?	'Don't you want one more?'
no sabes piloto (for: No sé 'piloto'.)	'I don't know (the word) "piloto".'

The present indicative is the only tense used by Carl, our least productive subject. In the other children, the periphrastic future (ir a plus infinitive) appears soon after the present, occurring second in three of the subjects and third in another. The present progressive (second in one subject, third in two subjects, and fourth in another) and the present perfect (second in one child, third in another, and fifth in another) seem to occur fairly early. The imperfect and preterite tenses vary widely in order of occurrence. One of the last tenses to appear is the future, which we find in only three of the children. (The concept of future action has, of course, been expressed earlier by use of the construction ir a plus infinitive.) In the case of the conditional tense, we do not observe acceptable usages at all, except in one instance late in Michael's output when he says:

me gusta sería Superman[1] (for: Me gustaría ser Superman.)	'I would like to be Superman.'

The early occurrence of the present, present progressive, periphrastic future, and present perfect tenses leads us to hypothesize that the child learns first those tenses which are most directly related to the primary tense modification <Pres>, along with the secondary modifications <Anteriority> and <Duration>. The secondary modification <Subsequence>, which combines with the present and imperfect tenses to produce the forms we call future and conditional, is late to appear. Combinations of <Anteriority> and <Duration> with <Imperfect> and <Preterite>, which would produce forms like había hablado 'he had spoken', había estado hablando 'he had been speaking', etc., do not occur at all in our data. It seems significant that of the primary Aux modifications, <Pres>, <Imperfect> and <Preterite> always occur first alone, and only later are combined with the secondary modifications.

The subjunctive appears in the data of two children, but only very late; and Michael, whose sampling over a two-year period was more than twice that of the other children, is the only child showing an awareness of the past subjunctive. We have reservations, nonetheless, about crediting him with the ability to produce this complex morphological inflection.

Figure 9 shows the order of appearance for each child of the feature person-number. The numerals I, II, and III represent the singular forms of first, second and third persons

respectively; IV, V, and VI represent the plural forms of these persons.

FIGURE 9. Sequence of person-number markers

Order	M	O	N	S	C
1st	III	II, III	I, III	III	I, III
2nd	II	I	II	I	VI
3rd	I	VI	VI	VI, IV	
4th	VI	IV		II	
5th	IV	V			

In all the children's data we observe the singular forms occurring first, with VI as the first plural form to appear. In three of the five subjects IV follows VI, while the other subjects included in this comparison did not show evidence of learning IV at all. In only one of the five subjects do we find the use of person V, the second person plural corresponding to the pronoun vosotros and to verb forms such as miráis and tenéis.

Since all the subjects show III occurring earliest, we may suggest that this form comes first and is the one on which others may be built. A child learns III easily, as in mira, pinta or dispara, resembling the imperative, a form that is consistently evidenced early by all our subjects. The II appears with the addition of a final /-s/ as in Tú pintas un avión 'You paint an airplane' or la caballo que tienes 'the horse that you have'. Person I, as in yo disparo 'I shoot' or yo pinto 'I paint', may at first alternate with the inappropriate inflection /-a/ as in yo pinta un avión. With the verb tener, Michael shows the sequence tiene, tienes, and then tieno which is later replaced by the standard form tengo. Person VI, the third person plural, next appears when the child simply adds the final /-n/ as in verbs like tienen, están and comen. Person IV, corresponding to nosotros, in forms like podemos, tenemos and jugamos, appears late in our data. And finally, as mentioned above, V, corresponding to vosotros, is apparently learned last of all.

In analyzing the development of the VP constituent in our subjects, we cannot ignore the question relating to all studies on language acquisition: When can we assume that the child has learned a particular structure? From a purely descriptive point of view, we may easily determine that the surface sentence Es mi amigo 'He's my friend' is derived by deleting the subject found in the deep structure. From the developmental point of view, however, we cannot be sure whether the child is already applying the rule for an optional subject deletion, or whether he omits the subject pronoun simply because he has not yet learned it. He may very well be able to put together only two of the constituents of this sentence at first: the copula es and the predicate noun phrase mi amigo. Then later on he may be able to add the subject noun phrase as a third element to generate El es mi amigo. If this last hypothesis is proved to be correct, it would have serious implications for our psycholinguistic grammar.

It is clear that the learning of a particular structure doesn't just happen abruptly, but takes place over a period of time. In one particular example, Michael reaches a point when he expresses awareness of a specific grammatical concept:

Yo pinta ... yo pinto ...	'I paint ... I paint ...
pinto un avión.	I paint an airplane.

Here he searches for the appropriate verb inflection, and finally succeeds in applying the rule satisfactorily. Only minutes later, however, in the same recording and in subsequent recordings, the child again produces:

yo pinta un avión

with the inappropriate verb ending.

One possible approach to the question of when a particular grammatical structure is actually learned is to apply a measure of frequency. Of the total output of a child's utterances containing a certain type of construction, a significant percentage of acceptable constructions would indicate that the learner has this particular grammatical concept under control. This type of analysis, however, would be more appropriate with the aid of an electronic computer.

There appear to be no new VP structures learned after the future tense, the combination of direct and indirect object pronouns, and person <V>. Further linguistic development is

indicated, however, by various combinations of structures already used.

4.34 Hypothetical order of learning of VP structures

As in the case of noun phrases, we have indications that there is a basic similarity in the process by which our six-year-olds, as well as our four-year-old, learn the structures of the verb phrase. We postulate a sequence for the learning of structures as follows:

(1) V <Imp>

(2) V <Imp> $\left\{\begin{bmatrix}\text{Adv}\\ \text{NP}\end{bmatrix}\right\}$

(3) Cop $\left\{\begin{bmatrix}\text{Pred}^2\\ \text{Adv}\end{bmatrix}\right\}$

(4) V (NP)

(5) V (S')

N O T E S

[1]It is interesting that, although Michael uses the correct morphological inflection for the conditional (as a combination of the features <Imperfect> and <Subsequence>), he attaches it to the embedded infinitive ser rather than to the verb gustar in the main sentence.

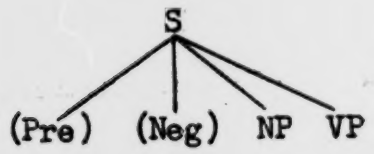
[2]Predicate may signify either NP or an adjectival including a single adjective or a prepositional phrase.

C H A P T E R 5

THE IMPERATIVE

5.1 Structure of the Imp in adult Spanish

In order to demonstrate how an imperative utterance is generated as a surface structure, the imperative (Imp) will be considered an optional constituent which appears as the Pre element in the base (See Section 2.22). Like the question (Q) and the negative (Neg) constituents, the imperative may be selected optionally by the speaker, as shown in the following tree:



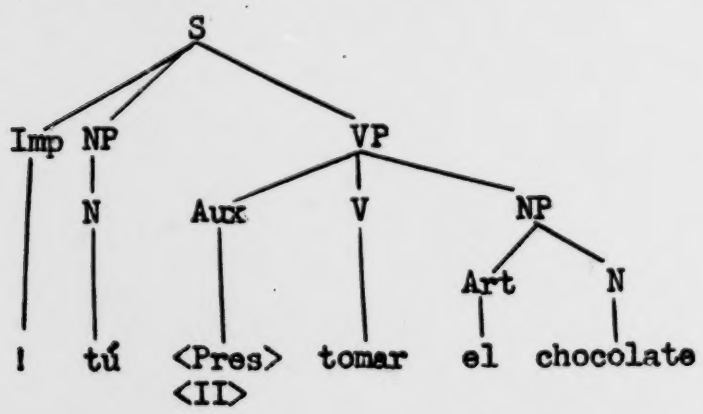
This base structure may also be represented by the rule:

S $\longrightarrow$ (Pre) (Neg) NP VP

where:

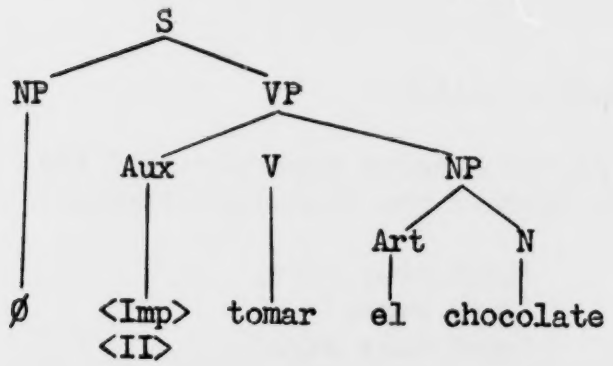
Pre $\longrightarrow$ $\left\{\begin{matrix} Q \\ Imp \end{matrix}\right\}$

With this interpretation of the base we may account for surface sentences that are either declarative, interrogative, or imperative, each with an optional negative component. Selection of the constituent Imp to generate an imperative utterance such as ¡Toma el chocolate! 'Drink the chocolate!' involves the following procedures starting with the deep structure:



We then apply a series of transformations by which we:

(1) move Imp to Aux where it becomes the feature <Imp> replacing the tense feature <Pres>; and
(2) delete person features in the NP to give an intermediate structure like:



Subsequent transformations at the morphological level incorporate the features of Aux into V and generate the surface structure: ¡Toma el chocolate! In the case of an utterance like No hables 'Don't talk', the combination of the two constituents Neg and Imp, optionally selected from the base, triggers the transformations necessary to generate the actual utterance.

5.2 Development of Imp in Michael's Spanish

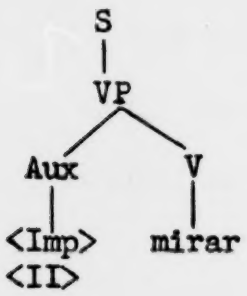
5.201. The earliest imperatives in Michael's data are single word utterances appearing in the very first sampling:

¡Mira!	'Look!'
¡Ven!	'Come!'

This type of construction, representing a complete sentence for the child, may be written:

S $\longrightarrow$ Aux V

In terms of adult grammar, Aux would have the features <Imp> and <II>, as a result of several transformations such as those just described. However, we cannot yet credit Michael with the competence to perform these transformations, since there is no evidence of his being able to manipulate any of the Aux features, or to delete the NP from the deep structure when he has not yet used a NP in this context. While the imperative sentence Mira has a surface structure resembling that of an adult's, we assume the deep structure of Michael's utterance at this time to be:



where Imp is used as an attention getter.

5.202. In recording two we can observe expansions of the imperative construction where Michael now includes adverbs:

Mira aquí.	'Look over here.'
Ven acá.	'Come here.'
Mira así.	'Look this way.'

Our rule for Michael's competence to generate imperatives may now be written:

S $\longrightarrow$ Aux V Adv

where the adverbs aquí and acá possess the feature:

<Location>

and the adverb así has the feature:

<Manner>

At this time we may give the child credit for optionally deleting the NP, since we now have evidence that he can generate imperative sentences either with or without it:

Francisco, mira.	'Francisco, look.'
Ven, Francisco.	'Come here, Francisco.'

Alternation of the use of the NP subject with subject-less utterances allows us to assume that Michael is aware of another constituent, the NP (See Chapter 3).

On the other hand, in the utterance Déjalo 'Leave it alone', we do not consider the child capable of using the adult rule for pronominalization since we do not yet have examples of his using deja along with a NP direct object or the pronominalized lo with another verb. Instead we shall assume that déjalo was learned as a single composite form in his lexicon.

5.203. In recording two we also find the imperative construction expanded to include an infinitive after the verb:

ven pintar (for: Ven a pintar.) 'Come on and paint.'

Although Michael omitted the necessary preposition, we may formalize this structure with the following rule:

VP $\longrightarrow$ Aux V S'

5.204. In recording three a further expansion of the imperative construction is marked by the use of a direct object NP:

Mira ésta. 'Look at this one.'
mira casa (for: Mira la casa.) 'Look at the house.'

The rule for an imperative utterance containing a NP may be stated:

VP $\longrightarrow$ Aux V NP (Adv)

where NP at this point may be a single noun or a pronominalized form.

5.205. In the fifth sampling we find the utterance:

diga 'muy grande bota' (for: Dí 'muy grande bota'.) 'Say "muy grande bota"(very large boot)'

which may be interpreted as an imperative followed by a NP, now with both N and accompanying modifier:

VP $\longrightarrow$ Aux V NP

5.206. Besides including a NP as direct object, the imperative construction at this time also contains a negative element:

no diga (for: No digas.) 'Don't say ...'

Although the imperative form is not appropriate from a morphological point of view, the syntactic structure is nonetheless acceptable. Consequently the rule for this type of utterance may be stated:

VP $\longrightarrow$ Neg Aux V

5.207. In this recording we also find the VP expanded to include an adverbial. However, unlike our example for the structure symbolized 5.202, this utterance contains an adverb which is modified by a prepositional phrase:

diga 'papel' entra de aquí (for: Diga 'papel' dentro de aquí.)	'Say "papel" (paper) into (this microphone) here.'

This structure may be described as follows:

VP $\longrightarrow$ Aux V NP PPh

5.208. At the time of the sixth recording, with the occurrence of the pronominalization Dámelo 'Give it to me', we may now give Michael credit for reordering transformations by which he switches the direct object lo to positions before and after the verb as needed:

No lo tengo.	'I don't have it.'
Dámelo.	'Give it to me.'

Thus we may assume a complementation of the pronoun positions, allowing us to credit the child with the rule:

VP $\longrightarrow$ Aux V Pro

5.209. In the eighth recording we find constructions using the first person plural form of the verb ir followed by the preposition a and an infinitive:

Vamos a ver.	'Let's see.'
Vamos a pintar.	'Let's paint.'

Based on the intonation pattern, in which we observe a slightly stronger stress on the verb vamos, we are interpreting these utterances as hortatory imperatives. Structurally we may write the following rule:

VP $\longrightarrow$ Aux V Prep S'

However, it is very difficult at times to distinguish in this particular verb the hortatory imperative from the indicative utterance Vamos a pintar 'We're going to paint.' The clear distinction with other verbs in Spanish, which have different inflections for these two functions:

jugamos	'we're playing'
juguemos	'let's play'

is not yet apparent in the data.

5.210. With the twelfth recorded sampling we observe more constructions with embedded infinitives followed by a NP direct object:

déjami pintá uno (for: Déjame pintar uno.) 'Let me paint one.'
déjame scribir uno de esos (for: Déjame escribir uno de esos.) 'Let me write one of those.'

Structurally we may describe the embedded infinitive with a NP direct object using the rule:

VP $\longrightarrow$ Aux V $[\text{Inf NP}]_S$,

5.211. In the same recording we also find an embedded clause introduced by the relator que:

mira que pinto (for: Mira lo que pinto.) 'Look at what I'm painting.'

Structurally we may represent these embeddings as follows:

VP $\longrightarrow$ Aux V que S'

Since they will be discussed in a later section, we shall simply mention sentence embeddings and relativization without going into details.

In recording fourteen Michael uses the indirect command involving the subjunctive form of the verb:

¡Que no tires! 'Don't throw it!'

This utterance, which may be interpreted as an embedded sentence, will be discussed in Chapter 7.

5.212. In the eighteenth recorded sampling we find an imperative construction including a direct object pronoun followed by an embedded clause introduced by the relator donde:

Déjalos donde estaban. 'Leave them where they were.'

Structurally we may describe this construction with the rule:

VP $\longrightarrow$ Aux V Pro donde S'

Recordings twenty-one and twenty-two contain more examples of indirect commands, some of which use the appropriate form

of the subjunctive:

deja que haga de otra forma (for: Deja que lo haga de otra forma.)	'Let me do it differently.'
Voy a decir a mi mamá que lo doble.	'I'm going to tell my mother to fold it.'

In recording twenty-five Michael continues to discriminate between affirmative and negative imperatives, as shown in utterances using the verb hacer:

No hagas tonterías.	'Don't do anything stupid.'

Although the rule for negative imperatives has already been accounted for, in this example we would like to point out the use of the NP after the negative imperative verb form.

In recording twenty-six we find an embedding within a negative construction which does not have the appropriate morphological ending:

no hablas que estoy ... (for: No hables que estoy ...)	'Don't talk because I'm ...'

Also in recording twenty-six we find an utterance which may be an example of the hortatory imperative with a verb other than ir:

jugamos en el suelo que es más mejor (for: Juguemos en el suelo que es mejor.)	'Let's play on the floor because it's better.'

However, we cannot credit Michael with the rule for the hortatory command because there is no evidence that he can distinguish between the indicative form jugamos and the imperative form juguemos.

5.213. In this same recording, the child shows that he can manipulate both direct and indirect object pronouns suffixed to an imperative verb form:

Póntelos allí arriba.	'Put them on up there.'
Ponlos allí.	'Put them there.'

Structurally we may account for this development with the rule:

VP $\longrightarrow$ Aux Pro NP (Adv)

5.214. In recordings thirty-three through thirty-seven we find numerous examples of the optional reordering of the NP subject pronoun to express contradiction or emphasis:

Dilo tú ... tú.	'You say it ... you.'
Hazlo, hazlo tú.	'Do it, you do it.'
Escríbelo tú.	'You write it.'

In order to represent this reordering rule structurally, we may write the following transformation rule:

$$NP_1 \text{ Aux V } NP_2 \Longrightarrow \text{Aux V } NP_2\ NP_1$$

$$1 \quad 2\ 3\ 4 \qquad\qquad 2\ 3\ 4\ \ 1$$

By recording thirty-eight, Michael has demonstrated that he can distinguish between the affirmative and negative forms of the verb <u>hacer</u>, used as imperatives:

Hazlo así.	'Do it this way.'
No hagas eso.	'Don't do that.'

In recording forty-one we find an example of the redundant pronoun <u>lo</u>, accompanied by <u>todo</u>, a pronoun in apposition, to express emphasis:

Tú dilo todo.	'You say it, all of it.'

In recording forty-seven there is some indication that Michael is beginning to distinguish between polite and informal imperative forms. In one utterance he uses the informal form corresponding to <u>tú</u>:

Lo puedes traer porque ...	'You can bring it because ...'

and soon afterwards he uses the polite form of the imperative in:

Pues tráigalo ahora mismo.	'Then bring it here right now.'

In our data, however, Michael has been using informal pronouns along with corresponding verb forms all the time. Consequently there are no utterances with contrasting forms to provide evidence that Michael can distinguish between polite and informal usage in the imperative. This competence should be anticipated as an advanced step in linguistic development.

Similarly, an even more advanced stage of development would be required to account for the use of the imperative relating to the plural of both the informal and polite forms, such as Venid a mi casa 'Come to my house' and Vengan a ver mis juguetes 'Come and see my toys.' In our data, which includes forty-nine samplings of Michael's Spanish, we do not observe any of the forms just mentioned.

At this point we shall summarize the imperative structures observed in Michael's data, along with an example of each of the structures. As in previous sections, a system of symbols is used in Figure 10 to indicate the chronological order observed in Michael's output. This sequence will then be compared with the sequencing of imperative structures in all the other subjects. Those structures found in the data of the other subjects and not found in Michael's data are listed at the end of the chart. Examples of imperatives produced by the other subjects are also provided.

FIGURE 10. First occurrences of various Imp structures in all children

5.201 Single word Imp

S → Aux V

M: Mira. (1)
O: Mira, mira. (1)
N: Mira. (2)
S: Mira. (2)
C: Mira. (4)

5.202 Two-word utterance; imperative plus adverb

S → Aux V Adv

M: Mira aquí. (1)
O: Mira así. (2)
N: mira ... ahora (2)

5.203 Two-word utterance; imperative plus infinitive

VP → Aux V S'

M: ven pintar (2)

FIGURE 10—Continued

5.204 Two-word utterance; imperative plus direct object NP

VP ⟶ Aux V NP (Adv)

M: mira casa (3)
O: Mira todos. (1)
N: Dame todos. (7)
S: Mira éste. (2)
C: mira lápiz (12)

5.205 Longer utterance; imperative plus direct object NP with modification

VP ⟶ Aux V NP

M: diga 'muy grande bota' (4)
O: Coge el teléfono. (11)
N: abre el boca (6)
S: Dame unos soldados. (5)

5.206 Negative imperative

VP ⟶ Neg Aux V

M: no diga (5)

5.207 Use of adverbial containing prepositional phrase

VP ⟶ Aux V NP PPh

M: diga 'papel' entra de aquí (5)
S: Abre la puerta para mí. (17)

5.208 Direct and indirect object pronouns

VP ⟶ Aux V Pro

M: Dámelo. (6)
O: Dámelo. (21)
N: Dámelo. (12)

5.209 Preposition plus infinitive

VP ⟶ Aux V Prep S'

M: Vamos a pintar. (8)

FIGURE 10--Continued

5.210 Infinitive plus NP direct object

VP $\longrightarrow$ Aux V [Inf NP]$_{S'}$

M: déjame scribir uno de esos (12)

5.211 Embedding using <u>que</u>

VP $\longrightarrow$ Aux V <u>que</u> S'

M: mira que pinto (12)

5.212 Embedding using <u>donde</u>

VP $\longrightarrow$ Aux V Pro <u>donde</u> S'

M: ¡Déjalos donde estaban! (18)
S: mira donde vas (5)

5.213 Use of both direct object and indirect object pronouns

VP $\longrightarrow$ Aux V Pro NP (Adv)

M: Pónte los allí. (26)
S: ponte la tape (15)

5.214 Inversion of subject pronoun for emphasis

(NP_1) V NP_2 $\Longrightarrow$ Aux V NP_2 NP_1

M: Dilo tú. (33)

5.3 Discussion of the comparative development of the Imp

Figure 11 shows the order of occurrence of various Imp structures in each of our subjects. The symbol 01 corresponds to the structure numbered 5.201 in Figure 10, and refers to the paragraph in this chapter with the same number.

As with our previous discussions on the NP and the VP, we shall base our comparison of the development of imperatives on the number and complexity of the individual components used in the entire imperative construction. Use of negation and the positioning of pronouns in imperative utterances will also be given consideration here. Other distinctions

indicating linguistic growth are those between imperatives in the second person, both singular and plural, and imperatives in the first person plural.

FIGURE 11. Comparison of the observed order of occurrence of imperatives

Recording No.	Michael	Opal	Niki	Stan	Carl
1	01,02	01,04		01	
2	03	02	01,02	04	
3	04				
4	05				01
5	06,07			05,12	
6	08		05		
7			04		
8	09				
•					
•					
11	10	05			
12	11		08		04
13	12				
•					
•					
15				13	
•					
•					
17				07	
18	13				
•					
•					
21		08			
•					
•					
23	14				

5.31 Number of elements in the imperative construction

The earliest imperative constructions in the data of all the subjects are one-word utterances. Imperatives then develop into two- and three-word constructions generally containing adverbs and object NPs. Later developments involve longer and more complex NPs, negative imperatives, embeddings, direct and indirect object pronouns, and various combinations of structures already learned.

5.32 Complexity of components in the imperative construction

The command ¡Mira! used in isolation may simply represent an attention-getter like a greeting or exclamation. However, when utterances with mira also include NP direct objects or adverbs with no pause after the uttering of the imperative form, we may assume that the word is being used as a verb and not simply as an expression to attract attention.

The occurrence of an imperative verb form followed by an infinitive, ven pintar, in Michael's second recording is the only example of this type of construction found so early. It is not until much later that Michael uses imperatives and embedded infinitives together with any degree of frequency. The absence of such constructions in the data of the other children may indicate that they are generally late in developing, or may simply reflect the smaller number of imperatives used by the other subjects.

The use of pronoun objects develops relatively late, at least well after the use of nouns has been established in the function of direct object. The early occurrence of utterances containing pronouns as in dámelo and déjalo may be attributed to the child's learning these constructions as complete units. We have evidence that one of our subjects can manipulate the direct object pronoun in dámelo because she has already produced a contrasting utterance, dame, without the use of the direct object pronoun. Michael demonstrates control of these pronouns with numerous examples, showing variation in the verb form as well as in the direct and indirect object pronouns: dámelo, déjame, déjalos, póntelos. The last example, where the indirect object is a reflexive pronoun, indicates an advanced step in learning and is found in the data of only one other child, in a late recording.

As stated previously in the discussion on the VP, the imperative construction may include an additional component which negates the verb. Although Michael says no diga in

the fifth recording, he later reverts back to an inappropriate morphological form: no hablas. No other examples of the negative imperative were found in our data. However, both Michael and Niki may be attempting to express the same concept in their utterances:

Que no tires.	'That you don't throw (it).'
Que no llores.	'That you don't cry.'

These constructions may be interpreted as a type of indirect imperative involving embedding, as in Yo quiero que no tires 'I want you not to throw (it).' The indirect imperatives produced by our subjects may thus indicate a possible relation between imperative constructions and relative clauses.

In the case of the hortatory imperative, we may credit Michael with this structure if we use his example of vamos a pintar, because the imperative form of this irregular verb is the same as the indicative. However, we cannot be certain that he is aware of this concept, since he later uses the morphologically incorrect form jugamos en el suelo, where the correct hortatory imperative form would be juguemos en el suelo 'Let's play on the floor.'

As with the NP and VP constituents, embedding represents advanced linguistic development. Beginning with a single infinitive form, embeddings become progressively more complex. We have examples with infinitives accompanied by prepositions, and with relative clauses beginning with relators que, donde, and porque. Embeddings with que are produced by two children, both in their twelfth recordings; with donde by two childre one in recording eighteen and the other in recording f ; and with porque by only one child in recording twent ix. (For a more detailed discussion on embeddings see C. pter 7.)

In summary, we may point out that the number of imperatives found in Michael's speech was overwhelmingly greater than that of any of the other children. It is difficult to explain this phenomenon. Although some explanation for this may be found in the personality of the child, we suspect that the lack of numerous imperatives in other subjects may be due to uneven data collecting techniques. Imperatives are often uttered in spontaneous conversation, or else they must be elicited by carefully prepared stimuli. Consequently our subjects with few examples of imperative constructions may simply not have had the occasion to produce such utterances.

5.33 Hypothetical order of learning of Imp structures

The following list represents a hypothetical ordering of imperative structures as they might be learned by an English-speaking child learning Spanish:

(1) Imp (single word)

(2) Imp { Adv / N / Infinitive }

(3) Imp NP

(4) Imp NP containing adjective modifiers

(5) Imp NP PPh

(6) Imp NP relator S'

C H A P T E R 6

THE INTERROGATIVE

6.1 Structure of the interrogative in adult Spanish

A study of the developing interrogative system contributes significantly to a description of language acquisition. While certain types of utterances produced by the child are closely influenced by those of the interlocutor, many questions are spontaneous in nature and thus are not direct responses to the utterances of the person with whom the child is conversing. Interrogatives produced by the child are therefore more representative of his creative linguistic competence.

The Spanish interrogative system includes two major types of questions: (1) SN (sí-no 'yes-no') questions having an interrogative intonation contour /233↑/ which are answerable by sí or no, as in:

¿Es tu amigo?	'Is he your friend?'
¿Vienes?	'Are you coming?'
¿Verdad?	'Isn't that so?'

and (2) KD[1] questions using the interrogative particles qué, dónde, cuánto(s), cuándo, cuál, quién, and cómo, as in the following:

¿Qué quieres comer?	'What do you want to eat?'
¿Dónde está Miguel?	'Where is Michael?'
¿Cuántos niños tienen?	'How many children do they have?'
¿Cuándo llegaste a Madrid?	'When did you arrive in Madrid?'
¿Cuál coche prefieres?	'Which car do you prefer?'
¿Quién es esa muchacha?	'Who is that girl?'
¿Cómo vas al colegio?	'How do you go to school?'

Also considered in this phase of our study are: (1) particle questions preceded by prepositions such as:

¿Por qué no viene?	'Why isn't he coming?'
¿Para qué es este dinero?	'What is this money for?'
¿Con quién has venido?	'Who did you come with?'
¿De dónde es ella?	'Where is she from?'

(2) indirect questions like:

Quiero saber qué estás haciendo. 'I want to know what you are doing.'

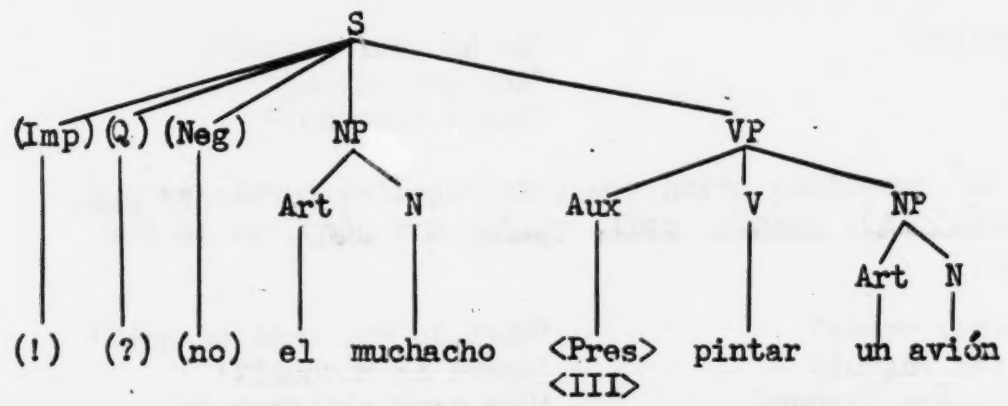
(3) questions with inherent interrogative words like:

Me pregunto si lloverá. 'I wonder if it will rain.'

and (4) either/or questions like:

¿Tienes tres años o cuatro años? 'Are you three years old or four years old?'

With the assumption that Q (Question) is an optional constituent appearing as the Pre element in the base structure (See Section 2.22), we may interpret the generative formation of Spanish questions in the following manner. The tree below illustrates the various possibilities for generating surface structures from an underlying deep structure:



Choosing to generate an affirmative sentence would give the surface structure:

El muchacho pinta un avión. 'The boy is painting an airplane.'

which may be formulated:

S $\longrightarrow$ NP VP

A negative utterance, <u>El muchacho no pinta un avión</u> 'The boy is not painting an airplane', may be written as:

S $\longrightarrow$ Neg NP VP

An imperative utterance such as ¡<u>Pinta un avión</u>! 'Paint an airplane!' may be generated from the same underlying

structure, which would be represented by the following formula:

S ⟶ Imp NP VP

If the speaker elects to generate a question of the SN type, he chooses the optional Q constituent, triggering the appropriate morphological transformations which ultimately produce the required question intonation. This interrogative surface structure ¿El muchacho pinta un avión? 'The boy is painting an airplane?', may be generated from a deep structure which we write as follows:

S ⟶ Q NP VP

The Neg constituent may be combined with either of the Pre elements to generate a negative imperative or a negative interrogative:

¡No pintes un avión!	'Don't paint an airplane!'
¿El muchacho no pinta un avión?	'Isn't the boy painting an airplane?'

The selection of Q from the base to generate a question of the SN variety may trigger one of a number of optional inversion transformations:

Q-1 SN Inversion—Option 1

Q	NP_1	V	NP_2	⟹	Q	V	NP_2	NP_1
¿ El muchacho		pinta	un avión?		¿ Pinta	un avión		el muchacho?
1	2	3	4		1	3	4	2

Q-2 SN Inversion—Option 2

Q	NP_1	V	NP_2	⟹	Q	V	NP_1	NP_2
¿ El muchacho		pinta	un avión?		¿ Pinta	el muchacho		un avión?
1	2	3	4		1	3	2	4

These same rules can operate on sentences where the verb is a copula:

Q-1

Q	NP_1	Cop	NP_2	⟹	Q	Cop	NP_2	NP_1
¿ El muchacho		es	mi amigo?		¿	Es	mi amigo	el muchacho?
1	2	3	4		1	3	4	2

Q-2

Q	NP_1	Cop	NP_2	⟹	Q	Cop	NP_1	NP_2
¿ El muchacho		es	mi amigo?		¿	Es	el muchacho	mi amigo?
1	2	3	4		1	3	2	4

Q-1

Q	NP	Cop	Adj	⟹	Q	Cop	Adj	NP
¿ El muchacho		es	inteligente?		¿	Es	inteligente	el muchacho?
1	2	3	4		1	3	4	2

Q-2

Q	NP	Cop	Adj	⟹	Q	Cop	NP	Adj
¿ El muchacho		es	inteligente?		¿	Es	el muchacho	inteligente?
1	2	3	4		1	3	2	4

Q-1

Q	NP	Cop	Adv	⟹	Q	Cop	Adv	NP
¿ El muchacho		está	aquí?		¿	Está	aquí	el muchacho?
1	2	3	4		1	3	4	2

Q-2

Q	NP	Cop	Adv	⟹	Q	Cop	NP	Adv
¿ El muchacho		está	aquí?		¿	Está	el muchacho	aquí?
1	2	3	4		1	3	2	4

Such inversions always involve optional transformations, whether the sentence is declarative or interrogative. Starting with two base strings, one of which reflects the selection of the optional Q constituent, we may find the same sentence elements appearing in various orders:

Juan viene ahora.	¿Juan viene ahora?
Juan ahora viene.	¿Juan ahora viene?
Ahora Juan viene.	¿Ahora Juan viene?
Ahora viene Juan.	¿Ahora viene Juan?
Viene Juan ahora.	¿Viene Juan ahora?
Viene ahora Juan.	¿Viene ahora Juan?

Since we find the same types of inversions in both declarative and interrogative utterances, we may hypothesize that these transformations are not necessarily triggered by the selection of Q.

If the speaker elects to generate a KD question such as ¿Qué pinta el muchacho? 'What is the boy painting?', we have two transformation rules: the KD Attraction and the KD Inversion Rules. The KD Attraction Rule attaches to the particular element in the sentence selected for interrogation, the Q constituent which may then be represented as KD.

Q-3 KD Attraction Rule

$$Q \quad NP_1 \quad V \quad NP_2 \Longrightarrow Q \quad NP_1 \quad V \quad [NP_2]_{KD}$$

¿ El muchacho pinta un avión?	¿ El muchacho pinta KD ?
1 2 3 4	1 2 3 4

The KD Inversion Rule then moves the question particle and any attached elements to the beginning of the sentence; and at the same time moves the verb to a position following the KD:

Q-4 KD Inversion Rule

$$Q \quad NP_1 \quad V \quad KD \Longrightarrow Q \; KD \; V \quad NP_1$$

¿ El muchacho pinta KD?	¿KD pinta el muchacho?
1 2 3 4	1 4 3 2

The procedure followed in Q-3, the KD Attraction Rule, and Q-4, the KD Inversion Rule, may be applied to the generating of all particle-type questions. The replacement of KD by the appropriate question particle is carried out as a separate operation which we shall refer to as a Selection Rule.

Because this type of rule involves a lexical selection, we shall distinguish it from other types of transformation rules and label it as follows:

S-1 KD Selection Rule

Q	KD	V	NP_1	$\Longrightarrow$	Q	qué	V	NP_1
¿	KD	pinta	el muchacho?		¿	Qué	pinta	el muchacho?
1	2	3	4		1	2	3	4

Selection of the appropriate KD particle from the lexicon is accomplished by means of the seven KD Selection Rules shown in Figure 12.

FIGURE 12. KD Selection Rules posited for a description of adult Spanish*

S-1

Q	KD	V	NP_1	$\Longrightarrow$	Q	qué	V	NP_1
¿	KD	pinta	el muchacho?**		¿	Qué	pinta	el muchacho?
1	2	3	4		1	2	3	4

S-2

Q	KD	V	NP_1	NP_2	$\Longrightarrow$				
¿	KD	pinta	el muchacho	un avión?					
1	2	3	4	5					
					Q	dónde	V	NP_1	NP_2
					¿	Dónde	pinta	el muchacho	un avión?
					1	2	3	4	5

FIGURE 12—Continued

S-3

Q KD N_2 V NP_1 Adv $\Longrightarrow$

¿ KD aviones pinta el muchacho aquí?

1 2 3 4 5 6

Q <u>cuántos</u> N_2 V NP_1 Adv

¿ Cuántos aviones pinta el muchacho aquí?

1 2 3 4 5 6

S-4

Q KD V NP_2 Adv $\Longrightarrow$ Q <u>quién</u> V NP_2 Adv

¿ KD pinta un avión aquí? ¿ Quién pinta un avión aquí?

1 2 3 4 5 1 2 3 4 5

S-5

Q KD N_2 V NP_1 Adv $\Longrightarrow$

¿ KD avión pinta el muchacho aquí?

1 2 3 4 5 6

Q <u>cuál</u> N_2 V NP_1 Adv

¿ Cuál avión pinta el muchacho aquí?

1 2 3 4 5 6

S-6

Q KD V NP_1 NP_2 ⇒

¿ KD pinta el muchacho un avión?

1 2 3 4 5

Q <u>cómo</u> V NP_1 NP_2

¿ Cómo pinta el muchacho un avión?

1 2 3 4 5

S-7

Q KD V NP_1 NP_2 ⇒

¿ KD pinta el muchacho un avión?

1 2 3 4 5

Q <u>cuándo</u> V NP_1 NP_2

¿ Cuándo pinta el muchacho un avión?

1 2 3 4 5

*The lexical selection process is presented here in abbreviated form. The choice of the specific KD particle, e.g. <u>qué</u> or <u>dónde</u>, in each case depends upon various features of the NP, adverb, or other item to be replaced. Only a KD particle whose other features are the same as those of the item to be replaced can be selected, so that we cannot choose <u>qué</u> to represent a questioned adverb, or even to represent an unknown NP with the feature <Human>.

**Note that the Selection Rules given here operate on the string produced by Rules Q-3 and Q-4, the KD Attraction and Inversion Rules.

The development of Spanish interrogatives in children will be described on the basis of syntactic complexity of the base structure and by the use of various types of questions, including the SN intonation and the KD question

particles. As in other sections of this report, our description will be based on the most productive subject, Michael, and then compared with the developmental process of the other subjects. In addition to describing data showing actual production, we shall also comment on the children's receptive competence as observed in their appropriate answers to questions raised by the interlocutors.

6.2 Development of interrogatives in Michael's Spanish

6.201. The earliest interrogative forms produced by Michael may be characterized by the use of an interrogative intonation pattern applied to various types of utterances which might otherwise have declarative intonation patterns. Since this kind of question does not involve inversions or other devices found in adult speech, it may be interpreted as the simplest kind of rule, whereby the Q constituent is added to any type of declarative utterance which we shall call at this time a nucleus (Nuc). Examples of questions produced in recording two are:

¿cosa?	'thing?'
¿avión?	'airplane?'

This rule may be formalized as follows:

$S \rightarrow Q\ Nuc$

where Nuc may represent any structure generated by the base rules: single-word utterance, pivot-like construction, or even a complete sentence.

6.202. In the second recording we find the first occurrence of a KD interrogative using the question particle qué:

¿Qué es?	'What is it?'

We may interpret this utterance as being generated as a result of the following transformations:

Q-3 KD Attraction Rule

$Q\ NP_1\ V\ NP_2 \Longrightarrow Q\ NP_1\ V\ [NP]_{KD}$

¿ Esto es un avión?	¿ Esto es KD ?
1 2 3 4	1 2 3 4

6.203. Q-4 KD Inversion Rule

Q NP_1 V KD $\Longrightarrow$ Q KD V NP_1

¿ Esto es KD? ¿ KD es esto?

1 2 3 4 1 2 3 4

6.204. S-1 Selection Rule

Q KD V NP_1 $\Longrightarrow$ Q qué V NP_1

¿ KD es esto? ¿ Qué es esto?

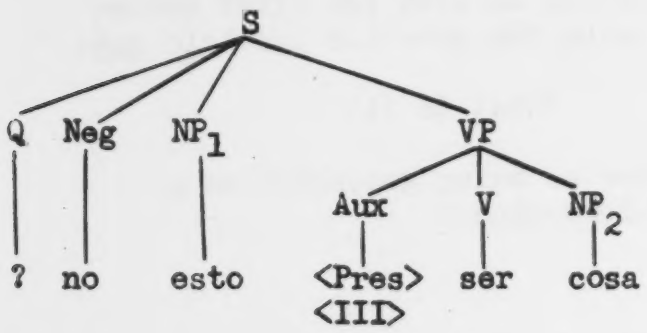
1 2 3 4 1 2 3 4

Thus, even at this early stage, Michael demonstrates the ability to apply both the KD Attraction Rule and the KD Inversion Rule, as well as the Selection Rule for the question particle qué. In Michael's utterance, ¿Qué es?, the NP esto has been deleted by an optional transformation.

6.205. In recording three we may observe the use of the SN intonation pattern applied to more complex syntactic patterns:

¿no es cosa?	'it's not a thing?'
¿no casa?	'no house?'

Structurally we may describe these questions as the result of selecting the Q constituent along with a more complex base which includes Neg:



We may formalize:

S $\longrightarrow$ Q Neg NP_1 V NP_2

6.206. In addition to SN questions including negation and the verbs quieres and dejas, we find more examples of interrogatives involving question particles, qué 'what' and dónde 'where'.

¿Dónde está (esto)? 'Where is (this)?'

Use of this question shows that Michael is now able to apply a Selection Rule to generate the question particle ¿dónde?:

Q KD V (NP_1) ⟹ Q dónde V (NP_1)

¿ KD está (esto)? ¿ Dónde está (esto)?

1 2 3 4 1 2 3 4

By recording four, then, we may say that Michael is able to use the question intonation consistently and can formulate KD interrogatives using a transformational pattern. An increase in his comprehension is noted, especially in connection with the questions asked by his friend Francisco, which he answers with sí or no.

Francisco:	¿Te gusta?	'Do you like it?'
Michael:	Sí.	'Yes.'
Francisco:	¿Nos salimos al jardín?	'Shall we go out to the yard?'
Michael:	No, un momento.	'No, (wait) a minute.'

6.207. In recording five the use of the question particle qué es considerably extended to include preceding prepositions:

¿Qué es eso? ¿uno sombrero?	'What is that? a hat?
¿Por qué, papá?	'Why, Daddy?'
¿Por qué dices, papá? (for: ¿Por qué lo dices, papá?)	'Why do you say that, Daddy?'

The Selection Rule for questions containing the particle por qué is as follows:

Q Prep KD (NP_2) V (NP_1) ⟹ Q Prep qué (NP_2) V (NP_1)

¿ Por KD (lo) dices (tú) ? ¿ Por qué (lo) dices (tú) ?

1 2 3 4 5 6 1 2 3 4 5 6

In the sixth sampling we find a lengthy SN question in which he uses the intonation pattern for asking clarification

of the question put to him:

¿los sellos de mi libro? 'the stamps from my book?'

He asks an either/or question:

¿Así o no? 'This way or not?'

The either/or question will not be dealt with in detail here, since it may be interpreted as a result of conjoining two or more base strings, each of which is a separate question in the deep structure:

$S \longrightarrow [Q\ (esto)\ es\ así]_S\ [Q\ Neg\ (esto)\ es\ así]_S$

Receptive control now includes appropriate answers to particle questions with dónde:

Interlocutor:	¿Dónde está?	'Where is it?'
Michael:	Aquí.	'Here.'
Interlocutor:	¿Dónde los pones?	'Where do you put them?'
Michael:	En una libro (for: En un libro)	'Into a book.'

In recording eight Michael demonstrates that he can formulate certain KD questions with or without optional deletion of the interrogative particle:

¿Qué es eso?	'What is that?'
¿Esto?	'This?'

All SN questions generated from this point on are syntactically grammatical since Michael is using the subject deletion rules quite consistently.

¿un perro? (for: (Es un perro?)	'Is it a dog?'
¿la otra? (for: ¿Quieres la otra?)	'Do you want the other one?'
¿la otra pequeña? (for: ¿Quieres la otra pequeña?)	'Do you want the other small one?'

In these elliptical utterances we may assume that Michael is even deleting the verb as well as the question particle. Michael's comprehension of either/or questions is now consistent:

Interlocutor:	¿Son buenos o malos?	'Are they good or bad?'
Michael:	Son malos.	'They're bad.'

Although we have no examples yet of questions with the particle cómo in Michael's production, we do have evidence of his understanding of the structure:

Interlocutor:	¿Cómo te llamas?	'What's your name?'
Michael:	Miguel.	'Michael.'
Interlocutor:	Miguel, ¿cómo más?	'Michael, what else?'
Michael:	Dato.	'Dato.'

In recorded sample nine Michael expands his use of qué questions to include an embedded sentence:

¿Qué es eso entrar ahí? (for: ¿Que es eso que entra ahí?)	'What is that that's coming in there?'

Recording ten contains longer utterances involving the complete structure for SN questions:

¿Tú quieres la piedra también?	'You want the stone too?'

He also asks for the explanation of a word with the use of qué:

¿Qué es una 'nube'?	'What is a "nube" (cloud)?'

6.208. Michael's production now is extended to utterances containing prepositions before the question particle, as in:

¿De qué color?	'What color?'

This type of question may be generated as a result of the following abbreviated transformation rule:

Q	Prep	KD	N	⟹	Q	Prep	qué	N	
¿	de	KD	color?		¿	de	qué	color?	
1	2	3	4		1	2	3	4	

From the point of view of comprehension, we find that he understands questions involving the subjunctive:

Interlocutor:	¿Ahora, qué quieres que te dibuje?	'Now, what do you want me to draw for you?'
Michael:	un perro	'a dog'

In recording eleven there are several utterances using the form <u>por qué</u>:

¿Por qué no?	'Why not?'
¿Por qué no tienes una?	'Why don't you have one?'

6.209. The particle <u>cómo</u> is now used productively by Michael:

¿cómo se llama la cuento? (for: ¿Cómo se llama el cuento?)	'What's the name of the story?'

The Selection Rule involved here may be described as follows:

Q KD V NP $\Longrightarrow$ Q <u>cómo</u> V NP

¿ KD se llama el cuento? ¿ Cómo se llama el cuento?

1 2 3 4 1 2 3 4

The question word <u>qué</u>, until now used only with the copula, appears with other verbs:

¿Qué pasa?	'What's happening?'

In recording twelve we find more examples of SN questions, as well as tag questions:

¿Te gusta eso?	'Do you like that?'
Son malos, ¿verdad?	'They're bad, aren't they?'

This tag question may be interpreted as having the following underlying structure:

S $\longrightarrow$ Q S' V NP

¿ Son malos es verdad?

This base string may undergo various transformations to produce a surface structure like <u>¿Es verdad que son malos</u>? 'Is it true that they are bad?', or one like that produced by our subject, <u>Son malos, ¿verdad?</u>

There are one-word utterances indicating an awareness of the question particles cuándo and cuál, but we do not have sufficient evidence to assume that he can manipulate these into questions at this point.

6.210. In recording thirteen Michael attempts to use a new question particle, but fails to add the required inflection, in:

¿quién son? (for: Quiénes son?) 'Who are they?'

Structurally, this appearance of a new question particle may be stated with the following Selection Rule:

Q KD V (NP) ⟹ Q quiénes V (NP)

¿ KD son (ellos)? ¿ Quiénes son (ellos)?

1 2 3 4 1 2 3 4

He understands this particle both with and without a preceding preposition in questions asked of him:

Interlocutor:	¿Quién es?	'Who is it?'
Michael:	Gina.	'Gina.'
Interlocutor:	¿Con quién has estado jugando?	'Who have you been playing with?'
Michael:	mi amigos (for: Mis amigos.)	'My friends.'

In sampling fifteen we may observe considerable flexibility in the use of questions with pronouns:

¿Me das esto?	'Will you give me this?'
¿Quiere uno de estos?	'Do you want one of these?'

He also demonstrates competence in manipulating the negative particle to generate negative-interrogative utterances:

¿Ves?	'Do you see?'
¿No ves?	'Don't you see?'
¿No ves esto?	'Don't you see this?'

In recording seventeen Michael now uses productively several question particles:

¿Quién? ¿Quién es tonto?	'Who? Who's dumb?'
¿Por qué él has hecho esto? (for: ¿Por qué él ha hecho esto?)	'Why did he do this?'

¿Dónde está Enrique?	'Where's Enrique?'
¿dónde vas ahora? (for: ¿A dónde vas ahora?)	'Where are you going now?'

We find Michael completing a question started by his interlocutor:

Enrique: ¿Estuviste jugando?	'Were you playing?'
Michael: Sí, con dos bicicletas.	'Yes, with two bicycles.'

From this recording on we find not only a larger number of question particles, but also the use of embedded sentences including the use of the infinitive and the subjunctive.

¿Quieres que tire otro a mi casa?	'Do you want me to shoot another one at my house?'

Recording eighteen shows an increased use of embeddings in Michael's questions, especially those involving infinitives:

¿Quieres ver cómo tiro?	'Do you want to see how I throw?'
¿Quieres ver por aquí?	'Do you want to see around here?'
¿Quieres bajar?	'Do you want to go downstairs?'
¿El puede bajar a jugar con los niños?	'Can he go downstairs and play with the children?'

In recordings nineteen and twenty we may observe the beginning use of compound verb forms:

¿Qué estás haciendo?	'What are you doing?'
¿Sabes que estoy hablando?	'Do you know that I am talking?'
¿Pero tú no bajas? (for: ¿Pero tú no te bajas?)	'But aren't you going downstairs?'
¿Por qué ha sido eso?	'Why was that?'

We also find an increased use of pronouns, as in:

¿Sabes que eso se hace?	'Do you know that that is done?'
¿Sabes qué te vas a hacer? (for: Sabes qué tú vas a hacer?)	'Do you know what you're going to do?'

In recording twenty we observe that Michael asks questions involving more complex structures, such as PPh

embedding:

¿Dónde está la otra de tumbao? (for: Dónde está el otro de tumbado?) 'Where is the other fallen one?'

6.211. The first example of the question particle cuánto appears also in this same recording:

A ver, ¿cuántos tengo yo? 'Let's see, how many do I have?'

This transformation may be described with the following Selection Rule:

Q KD NP_2 V NP_1 $\Longrightarrow$ Q cuántos NP_2 V NP_1

¿ KD aviones tengo yo ? ¿ Cuántos aviones tengo yo ?

1 2 3 4 5 1 2 3 4 5

A subsequent N deletion rule results in the utterance ¿Cuántos tengo yo?

In recording twenty-one Michael employs the SN intonation pattern in highly complex structures containing embeddings:

¿Quieres ver cómo flota? 'Do you want to see how it floats?'

¿Tú has visto esto que hago en el colegio? 'Have you seen this that I do in school?'

¿Sabes por qué duermo muy, muy pronto por la noche? 'Do you know why I go to sleep very, very early at night?'

The following interrogative differs from ¿Qué es esto? in that it contains a verb other than a copula, and from ¿Qué pasa? in that the particle qué represents a questioned object rather than subject?

Eso, ¿qué dice eso? 'That, what does that say?'

Thus, for the first time Michael demonstrates the ability to apply the KD Inversion Rule to a string with a verb other than the copula:

Q NP_1 V KD $\Longrightarrow$ Q KD V NP_1

¿ Eso dice KD? ¿ KD dice eso?

1 2 3 4 1 4 3 2

His ability to comprehend now includes questions like the following:

Interlocutor:	Gina, ¿qué está haciendo?	'Gina, what's she doing?'
Michael:	Durmiendo.	'Sleeping.'

In recording twenty-two we find an extensive use of tag questions such as:

Porque estamos jugando, ¿no?	'Because we're playing, isn't that so?
Tengo muchos trozos, ¿eh?	'I have lots of pieces, eh?'
Para ver que tengo, ¿eh?	'In order to see what I have, eh?'

In order to convey irony and annoyance at his interlocutor's questions, Michael uses a negative-interrogative construction:

¿No lo ves muy bien con los ojos?	'Don't you see it very clearly with your own eyes?'

6.212. Development in the use of particle questions is observed with the addition of new prepositions before the particle:

¿Para qué miras a las cosas? (for: ¿Para qué miras las cosas?)	'Why are you looking at the things?'

The Selection Rule involved here may be written as follows:

Q Prep KD V NP_1 NP_2 $\Longrightarrow$ Q Prep <u>qué</u> V NP_1 NP_2

¿ Para KD miras tú las cosas? ¿ Para qué miras tú las cosas?

1 2 3 4 5 6 1 2 3 4 5 6

6.213. In the twenty-third recording we find the subject placed at the beginning of an inverted sentence for the purpose of emphasis:

Pero las tijeras de Gina, ¿dónde están?	'But Gina's scissors, where are they?'

This inversion may be stated with the following transformation rule:

Q NP_1 Cop dónde ⟹

¿ Las tijeras de Gina están dónde?

1 2 3 4

Q NP_1 dónde Cop

¿ Las tijeras de Gina dónde están?

1 2 4 3

The use of cómo is noted for the first time in utterances other than those involving ¿cómo se llama?, as in:

¿Cómo es más bonito? 'How is it prettier?'

in challenging his friend's:

¡Es mucho más bonito! 'It's much prettier!'

The negative-interrogative construction can be expanded:

¿No? ¿No van a matar ninguno? (for: ¿No van a matar a ninguno?) 'No? They're not going to kill anyone?'

In the thirtieth recording there are more uses of cómo:

¿Cómo es tu lámpara? 'What is your lamp like?'
¿Cómo se llaman los dos? 'What are the two of them called?'

Michael comprehends very well questions with cómo and can distinguish the question particle from the relator como:

Interlocutor: ¿Cómo es tu colegio? 'What is your school like?'
Michael: Como americano. 'Like an American school.'

In this recording he also uses como as a relator in:

Es una cosa como esto. 'It's a thing like this.'

6.214. In recording thirty-one Michael uses the particle cuál in a complete construction:

¿Cuál color quieres? 'What color do you want?'

¿Cuál color de estos quieres? 'Which one of these colors do you want?'

¿Cuál llega aquí? 'Which one reaches here?'

In generating this type of interrogative Michael used a Selection Rule which may be described as:

Q KD N_2 V NP_1 ⟹ Q <u>cuál</u> N_2 V NP_1

¿ KD color quieres tú? ¿ Cuál color quieres tú?

The use of the particle <u>dónde</u> is observed in an expression of probability:

¿Dónde estará esto? (for: ¿Dónde estará eso?) 'Where could that be?'

In the thirty-fifth recording we find a reference to the question particle <u>cuándo</u>, but Michael does not yet provide us with evidence that he is capable of generating the type of question which includes the interrogative particle <u>cuándo</u>. Here it appears that he is questioning a word which he does not yet understand:

Interlocutor: ¿Sabes cuándo se juega con eso? 'Do you know when they play with that?'

Michael: ¿Cuando? '(Did you say) when?'

6.215. Also in this recording we find the particle <u>cuál</u> used with a preposition:

¿ A cuál tienda? 'To what store?'

To describe this transformation involving a preposition before the question particle we may write the following abbreviated rule:

Q Prep KD N ⟹ Q Prep <u>cuál</u> N

¿ a KD tienda? ¿ a cuál tienda?

1 2 3 4 1 2 3 4

He can also change pronouns that he hears in questions:

Interlocutor: Y quién es tu valentine? 'And who is your valentine?'

Michael: ¿Quién es mi valentine? 'Who is my valentine?'

6.216. The thirty-sixth recorded sample contains indirect questions:

¿Tú sabes cuándo es mi cumpleaños?	'Do you know when my birthday is?'

Here we may credit Michael with the Selection Rule for the KD particle cuándo:

Q KD V NP ⟹ Q cuándo V NP

¿ KD es mi cumpleaños? ¿ Cuándo es mi cumpleaños?

1 2 3 4 1 2 3 4

At this time there are also more negative-interrogative constructions:

¿No ves que yo te he hecho esto?	'Don't you see that I've done this for you?'
¿Por qué no lo cuentas tú?	'Why don't you count it?'
¿Por qué no hacistes? (for: ¿Por qué no lo hiciste?)	'Why didn't you do it?'

In recording thirty-seven we find the SN-type question containing more than one embedding:

¿Tú quieres ver cuando salta Tintín encima del hombre?	'Do you want to see when Tintín jumps on top of the man?'

6.217. The forty-fifth recorded sampling shows the SN-type interrogative with an inversion of the subject and verb:

¿Es ése el última día? (for: ¿Es ése el último día?)	'Is that the last day?'

This type of inversion may be described with the following rule:

Q NP_1 Cop NP_2 ⟹ Q Cop NP_1 NP_2

¿ Ese es el último día? ¿ Es ese el último día?

1 2 3 4 1 3 2 4

Michael demonstrates his ability to use the reflexive form of the pronoun along with compound tenses:

¿Y si no te has portado bueno? (for: ¿Y si no te has portado bien?) 'And if you haven't behaved yourself?'

We shall now summarize in Figure 13 all transformation rules pertaining to Michael's output, so that we may compare the development of his interrogative system with that of all the other subjects.

FIGURE 13. First occurrences of various interrogative structures in all children

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6.201 Intonation /233↑/

S → Q Nuc

M: ¿cosa? (1)
O: ¿aquí? (1)
N: ¿un maquito? (1)
S: ¿en inglés? (1)
C: ¿letras? (2)

6.202 Identification of S element questioned

$Q\ NP_1\ V\ NP_2 \Rightarrow Q\ NP_1\ V\ [NP_2]_{KD}$

M: ¿Qué es? (1)
O: ¿Qué es esto? (1)
N: ¿Cuántos es? (1)
S: ¿Qué es esto? (2)
C: ¿Qué es esto? (13)

6.203 KD particle question word order

$Q\ NP_1\ V\ KD \Rightarrow Q\ KD\ V\ NP_1$

M: ¿Qué es? (1)
O: ¿Qué es esto? (1)
N: ¿Cuántos es? (1)
S: ¿Qué es esto? (2)
C: ¿Qué es esto? (13)

6.204 Selection of <u>qué</u>

$Q\ KD\ V\ NP_1 \Rightarrow Q$ <u>qué</u> $V\ NP_1$

M: ¿Qué es? (1)
O: ¿Qué es esto? (1)

FIGURE 13--Continued

N: ¿Qué es eso? (3)
S: ¿Qué es esto? (2)
C: ¿Qué es esto? (13)

6.205 Negative intonation (SN) question

$S \longrightarrow Q\ Neg\ NP_1\ V\ NP_2$

M: ¿No es cosa? (3)
O: ¿No lo sabes? (19)
N: ¿No quieres uno más? (2)

6.206 Use of dónde

$Q\ KD\ V\ NP_1 \Longrightarrow Q$ dónde $V\ NP_1$

M: ¿Dónde está?(3)
O: ¿Dónde está la Madre Vega? (7)
N: ¿Dónde está un gato? (5)
S: ¿Dónde está la mesa? (2)

6.207 Preposition plus KD, por qué

$Q\ Prep\ KD\ NP_2\ V\ NP_1 \Longrightarrow Q\ Prep$ qué $NP_2\ V\ NP_1$

M: ¿Por qué lo dices, papá? (5)
O: ¿Por qué una arriba y una abajo? (9)
N: ¿Por qué ella (está) comiendo? (5)

6.208 Use of de qué before N

$Q\ Prep\ KD\ N \Longrightarrow Q\ Prep$ qué N

M: ¿de qué color? (10)
N: ¿de qué color? (14)

6.209 Selection of cómo

$Q\ KD\ V\ NP \Longrightarrow Q$ cómo $V\ NP$

M: ¿Cómo se llama la cuento? (11)
O: ¿Cómo se llama esto? (10)
N: ¿Cómo se llama esto color? (14)
S: 'Meat', ¿cómo se llama? (6)

FIGURE 13—Continued

6.210 Selection of <u>quién</u>

Q KD V NP ⟹ Q <u>quién</u> V NP

M: ¿quién son? (13)
O: ¿Quién sabe más, la mamá, la papá, o los niños? (16)
N: ¿Quién andar en esto? (12)

6.211 Selection of <u>cuánto(s)</u>

Q KD NP_2 V NP_1 ⟹ Q <u>cuánto</u> NP_2 V NP_1

M: ¿Cuántos tengo yo? (20)
O: ¿Y cuánto es eso? (7)
N: ¿Cuánto es esto? (2)
S: ¿Cuántos niños en la escuela? (11)

6.212 <u>para qué</u>

Q Prep KD V NP_1 NP_2 ⟹ Q Prep <u>qué</u> V NP_1 NP_2

M: ¿Para qué miras a las cosas? (22)

6.213 Particle question inversion

Q NP_1 V KD ⟹ Q NP_1 KD V

M: Las tijeras de Gina, ¿dónde están? (23)
O: Jueves ¿qué es? (8)
S: 'Meat', ¿cómo se llama? (6)
C: Esto, ¿qué es? (17)

6.214 Selection of <u>cuál</u>

Q KD NP_2 V NP_1 ⟹ Q <u>cuál</u> NP_2 V NP_1

M: ¿Cuál color quieres? (31)
O: ¿Cuál es el primero aquí? (21)
N: ¿Cuál es esto? (5)

6.215 <u>a cuál</u>

Q Prep KD N ⟹ Q Prep <u>cuál</u> N

M; ¿a cuál tienda? (35)

FIGURE 13--Continued

6.216 Selection of cuándo

Q KD V NP $\Rightarrow$ Q cuándo V NP

M: ¿Tú sabes cuándo es mi cumpleaños? (36)

6.217 Yes-no subject-verb inversions

Q NP_1 V NP_2 $\Rightarrow$ Q V NP_1 NP_2

M: ¿Es ése el último día? (45)

6.218 a qué

Q Prep KD V Adv $\Rightarrow$ Q Prep qué V Adv

O: ¿A qué jugamos ahora? (21)

6.219 a dónde

Q Prep KD V NP_1 $\Rightarrow$ Q Prep dónde V NP_1

O: ¿A dónde vas? (11)

6.220 Intermediate word order in particle question with preposition para

NP V Prep KD $\Rightarrow$ KD V NP Prep

N: ¿Qué es eso para? (9)

6.221 Intermediate word order in particle question with preposition por

NP V Prep KD $\Rightarrow$ Prep KD NP V

N: ¿Por qué ella (está) comiendo? (5)

6.222 Intermediate word order in particle question without preposition

Q NP_1 V KD Adv $\Rightarrow$ Q KD NP_1 V Adv

N: ¿Qué tú tienes aquí? (16)

6.223 Yes-no NP-VP inversion

Q NP_1 V Adv $\Rightarrow$ Q V Adv NP_1

S: ¿Está aquí el Escorial? (10)

6.3 Discussion of the comparative development of interrogatives

Figure 14 shows the order of occurrence of interrogative structures for all subjects. The symbol 01 corresponds to the structure symbolized 6.201 in the text and in Figure 13.

FIGURE 14. Comparison of the observed order of occurrence of interrogatives

Recording	M	O	N	S	C
1	01	01,02, 03,04	01,02,03	01	
2	02,03,04		05,11	02,03, 04,06	01
3	05,06		04		
4					
5	07		06,07, 14,21		
6				09,13	
7		06,11			
8		13			
9		07	20		
10	08	09		23	
11	09	19		11	
12			10		
13	10				02,03, 04
14			08,09		
15					
16		10	22		

FIGURE 14—Continued

Recording	M	O	N	S	C
17					13
18					
19		05			
20	11				
21		14,18			
22	12				
23	13				
.					
.					
31	14				
.					
.					
35	15				
36	16				
.					
.					
45	17				

We have analyzed the development of the Spanish interrogative system in one four-year-old and in four six-year-old speakers of American English according to the criteria of: (1) complexity of the base; and (2) different types of questions and particles.

6.31 Complexity of the base in interrogatives

The earliest type of interrogative to appear in the children's data is the SN (yes-no) question involving the use of an interrogative intonation pattern. This pattern may be applied to various kinds of utterances, as the child's productive ability develops from single words to pivot-like constructions and to increasingly more complex sentences. The following examples illustrate the developing complexity of the base, as shown by an increase in the number and types

of sentence elements and in the progression from use of copula to other verbs in the same kinds of constructions:

Michael: ¿Cosa? (1)
¿No es cosa? (3)
¿Tú quieres la piedra también? (10)
¿Tú quieres ver cuando salta Tintín encima del hombre? (37)

Opal: ¿Aquí? (1)
¿Esta ... muñeca? (4)
¿Ahora yo soy profesora y de taxi? (11)

Niki: ¿un maquito? (for: ¿un poquito?) (1)
¿Quiere vino? (6)
¿Tú quieres caramelos ahora? (8)

Stan: ¿En inglés? (1)
¿Es este árbol? (2)
¿Tú quieres un castillo moro? (14)

Carl: ¿Letras? (2)
¿Esta es una palacio? (17)

6.32 Different types of questions and particles

The SN questions in our data all follow the normal word order of declarative statements, i.e.:

S $\longrightarrow$ NP VP

except for only two inversions, one of which occurs very late in the development of our most productive subject:

Michael: ¿Es ése el último día? (45)
Stan: ¿Está aquí el Escorial? (10)

The fact that SN inversions appear late may be related to the frequency of such reorderings in normal adult Spanish. Because we find inversions appearing later and less frequently, our data supports the hypothesis that the child learning a second language acquires the base rules before the transformations.

Like the SN interrogatives used by our subjects, their KD questions also show an increasing complexity of structures:

Michael: ¿Qué es esto? (1)
¿Qué es eso entrar ahí? (9)
¿Por qué no lo cuentas tú? (36)

Opal: ¿Qué es esto? (1)
¿Qué quieres? (11)
¿Qué son 'lecciones'? (13)
Mamé, ¿dónde está mi reloj de 'vamos a la cama'? (19)

Niki: ¿Cuántos es? (1)
¿Dónde está un gato? (5)
¿Qué vas a pintar tú? (8)
¿Cómo se llama esto color? (14)

Stan: ¿Qué es esto? (2)
¿Cuántos niños en la escuela? (11)

Carl: ¿Qué es esto? (13)
¿Qué es uno 'señor'?

The first KD interrogative to appear in most cases is an utterance like ¿Qué es esto?, which involves the use of both the KD Attraction and Inversion Rules. The KD Inversion Rule produces the word order most common to the KD questions:

S $\longrightarrow$ Q KD V NP

Other inversions are also possible with the KD particles, however. Michael's question, Las tijeras de Gina, ¿dónde están?, for example, would be an acceptable sentence in adult Spanish. Other utterances found in our data are not acceptable adult speech, and may be examples of intermediate structures:

¿Por qué ella (está) comiendo?
¿Qué tú tienes aquí?

From the last two examples we may hypothesize two steps for KD inversion:

(1) Move the particle to the front of the sentence:

Q NP_1 V KD Adv $\Longrightarrow$ Q KD NP_1 V Adv

¿ Tú tienes qué aquí? ¿ Qué tú tienes aquí?

1 2 3 4 5 1 4 2 3 5

(2) Invert the subject and the verb:

Q	KD	NP_1	V	Adv	>	Q	KD	V	NP_1	Adv
¿	Qué	tú	tienes	aquí?		¿	Qué	tienes	tú	aquí?
1	4	2	3	5		1	4	3	2	5

Another possible intermediate structure is the following:

¿Qué es eso para? 'What is that for?'

Here the KD particle has been moved to the beginning of the sentence, but the preposition which should have moved also, since it is part of the same prepositional phrase, has been left behind. Aside from the probability of interference from the subject's native English, this example indicates that competence with structures involving a preposition plus a KD particle develops later than the ability to use correctly the question particle alone. Thus, qué alone appears before por qué, de qué, para qué, a qué; cuál occurs before a cuál; and dónde precedes a dónde.

The number of different question particles used by a child is highly correlated with overall productivity: all seven appear in Michael, who is the most productive; six in Opal and Niki, who are next in order of productivity; and only four and one respectively occur in the least productive subjects, Stan and Carl. The order of appearance of the KD particles in our sample is shown in Figure 15.

The particle qué is the first to appear and to become well established in all five of the subjects analyzed here. Dónde appears soon after qué in four of the five subjects. There is no strong evidence in the data for the order of cómo and cuánto. Questioning of a human subject with quién is a later development, found only after several KD particles have occurred. In three of the five subjects, quién follows cómo; in a fourth subject, it does not yet appear, even though cómo does; in the fifth subject, neither one appears. Cuál, showing a greater degree of specificity because it implies one of a definite limited set, appears late, and in only three subjects. Cuándo is found only in Michael, and occurs late; this finding may be compared with those of Klima and Bellugi (1966), who indicate a rather late and limited use of the question word when in English.

FIGURE 15. Comparative order of occurrence of KD particles in all subjects

Order	M	O	N	S	C
1st	qué	qué	cuánto	qué	qué
2nd	dónde	dónde	qué	dónde	
3rd	cómo	cuánto	dónde	cómo	
4th	quién	cómo	cuál	cuánto	
5th	cuánto	quién	quién		
6th	cuál	cuál	cómo		
7th	cuándo				

The order of appearance of the KD particle may reflect the influence of the interviewers, who keep asking the child, e.g., ¿Qué es esto? The effect of the interlocutor's utterances is especially apparent in Niki's early use of the particle cuánto, as shown in the following exchange:

Interlocutor:	Y ahora yo te enseño. ¿Cuántos?	'And now I'll show you. How many?'
Niki:	¿Uno?	'One?'
Interlocutor:	No, dos. Ahora tú. Dime: ¿cuántos?	'No, two. Now you. Tell me: how many?'
Niki:	¿Cuántos?	'How many?'
Interlocutor:	Seis. ¡Oh! Uno. ¿Cuántos? ¿Cuántos son?	'Six. Oh! One. How many? How many are they?'
Niki:	Dos.	'Two.'
Interlocutor:	A ver tú.	'Let's see you.'
Niki:	¿Cuántos es? (for: ¿Cuántos son?)	'How many are they?'

While it can be argued that the analysis of a child's production is only a partial reflection of his productive competence and therefore not sufficient to determine his grammar (Chomsky 1964), we can, nevertheless, obtain a

more complete picture of the development of his linguistic competence by evaluating what the child understands as well. Bellugi (1965) states:

> The study of comprehension has the major advantage that the input is known--it being the sentence comprehended. In production, on the other hand, the input is usually completely obscure. The natural technique employed here, of looking at a child's answers to the interlocutor's questions, is therefore extremely welcome.

There is evidence in all our subjects for the comprehension of questions and particular KD particles before their actual production. This lends support to the widely-held hypothesis that receptive competence, or understanding, comes before productive competence, or speaking.

N O T E S

[1]Following an established convention, questions of this type are labeled KD, K to represent the initial consonant sound of question particles like qué, cómo, cuál, etc., and D to represent dónde. In English these are often referred to as WH questions.

CHAPTER 7

SENTENCE COMPOUNDING AND EMBEDDING

7.1 Structure of compounded and embedded sentences in adult Spanish

In this section we shall discuss two major types of conjoined syntactic constructions: (1) compounding, which is the juxtaposition of two or more independent clauses, usually referred to as compound sentences; and (2) embedding, which is the conjoining of one or more subordinate clauses within a main clause. Of these two types of constructions, the latter is considered by some investigators of child language to be the more sensitive measure of linguistic growth (cf. Hunt 1964). Our primary purpose here will be to describe the various types of conjoining and show how they develop in our subjects' Spanish. We shall focus our attention on the processes of embedding which are presumably more complicated for the learner than those of compounding.

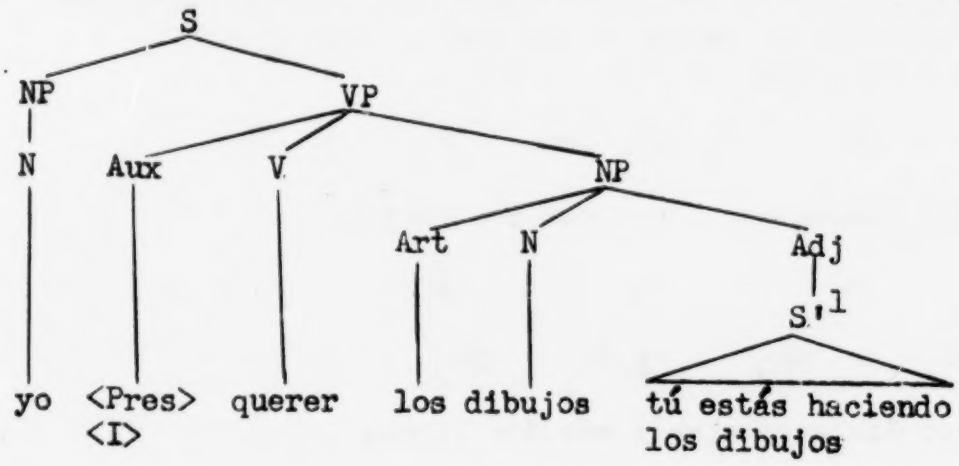
In order to describe the transformations involved in generating an embedded clause, we shall demonstrate with the utterance:

Quiero los dibujos que estás haciendo.	'I want the drawings that you're making.'

We shall assume that the deep structure of this utterance contains two underlying sentences:

1.	Yo quiero los dibujos.	'I want the drawings.'
2.	Tú estás haciendo los dibujos.	'You're making the drawings.'

These deep structures may be shown with the following tree:



The process of embedding is carried out by the following transformations:

(1) replace the direct object NP' los dibujos in S' with que because of its identity with the direct object NP in the main sentence, S; and
(2) move que to the front of S' where it serves as a relator.

From this point on we shall not repeat these intermediate transformations unless new processes are involved. Further transformations, including the optional deletion of the NP subjects of both S and S', result in the surface structure:

Quiero los dibujos que estás haciendo.

Other types of embedding will be described in our discussion of the development of these constructions as they appear in the data of our subjects.

7.2 Development of sentence compounding and embedding in Michael's Spanish

7.201. The earliest form of syntactic conjoining is the compounding of constructions by means of a coordinate conjunction. This is observed in the fifth recording where we find an utterance containing two constructions both of which are assumed to be pivot-type sentences which have omitted the copula:

ese dos scompetas y esa dos libros (for: Esos son dos escopetas y esos son dos libros.)	'Those are two rifles and those are two books.'

In order to indicate more revealingly the language development that has presumably taken place, we shall describe this type of construction as two independent copula-type sentences which are conjoined by means of the conjunction y 'and'. Stated as a transformation rule we have:

$[NP_1 \ Cop \ NP_2 \ ]_S \ [NP_1 \ Cop \ NP_2 \ ]_S \Rightarrow$

eso son dos escopetas eso son dos libros

1 2 3 4 5 6

$NP_1 \ NP_2$ y $NP_1 \ NP_2$

eso dos escopetas y eso dos libros

1 3 y 4 6

We cannot be sure at this point whether the copula forms have been deleted optionally or simply have not yet been learned.

7.202. In recorded sampling eight we find more examples of the compounding of copula sentences, some of which include the copula forms while in others the copula is omitted:

éste es el casa y éste es el árboles (for: Esta es la casa y estos son los árboles.) — 'This is the house and these are the trees.'

eso es un baco y eso uno lobo (for: Eso es un barco y eso (es) un lobo.) — 'That is a ship and that (is) a wolf.'

In our first example we have given Michael credit for inserting the copula even though the forms used do not show complete number agreement. In our rule[2] below we shall indicate the transformation that would take place in adult speech:

$[NP_1\ Cop\ NP_2\ ]_S\ [\ NP_1\ Cop\ NP_2\ ]_S \Longrightarrow$

ésta es la casa estos son los árboles

1 2 3 4 5 6

$NP_1\ Cop\ NP_2\ \underline{y}\ NP_1\ Cop\ NP_2$

ésta es la casa y estos son los árboles

1 2 3 y 4 5 6

Judging, however, from the lack of number agreement between the copula and the subject pronominal, we may conclude that Michael still lacks complete control in the production of these utterances. We point out that his lack of control is limited to morphological aspects rather than syntactic order which is grammatically acceptable.

7.203. Up to this point, the compounding of similar sentences has been observed. We now see sentences compounded which are dissimilar in that each independent clause contains a different type of verb:

La piedra no está y mira eso. — 'The stone isn't (there), and he looks at that.'

The compounding of these types of constructions may be described with the following transformation rule:

$[Neg \quad NP \quad Cop \quad Adv]_S \; [NP_1 \; V \quad NP_2]_S \Longrightarrow$

no la piedra está aquí él mira eso

NP Neg Cop y V NP_2

la piedra no está y mira eso

2 1 3 y 6 7

This type of syntactic construction results from the joining of underlying sentences by means of the coordinate conjunction y, which is used almost exclusively during this phase of Michael's acquisition of Spanish. The use of the conjunction y as the initial word of an utterance may also be interpreted as the deletion of an entire sentence which may have been uttered or cued by the interlocutor:

y dice la dragón está en tu casa (for: Y dice que el dragón está en tu casa.)	'And he says that the dragon is in your house.'
Y la niña está aquí.	'And the little girl is here.'

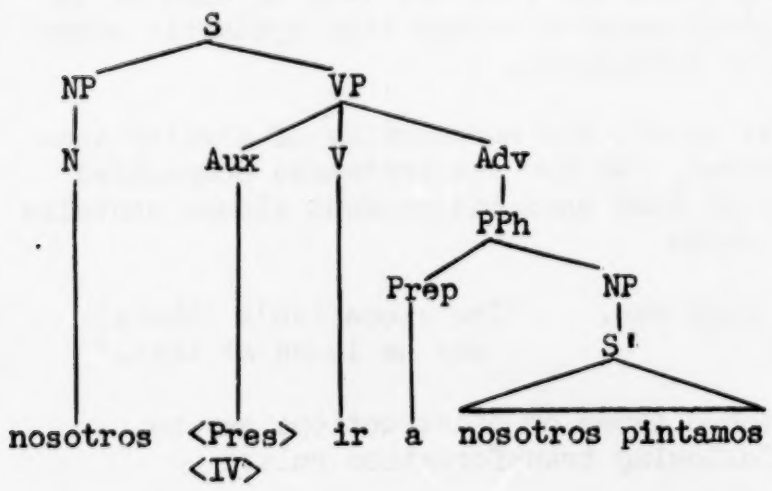
7.204. In the eighth recording we also find an example of the use of ir a plus the infinitive:

Vamos a pintar.	'Let's paint.'

This utterance may be interpreted as having two underlying sentences:

1. Nosotros vamos a (hacer) algo.	'We're going to (do) something.'
2. Nosotros pintamos.	'We paint.'

These structures may be shown in the following tree:



The transformations required are as follows:

(1) delete the subject NP' nosotros in S' because of its identity with the subject NP in S; and
(2) change the V' pintamos in S' to the pronominalized infinitive pintar (cf. Falk 1968).

These and subsequent transformations permit us to generate the surface structure:

Vamos a pintar.

Stated as a transformation rule, we have:

NP	V	Prep	[NP'	V'	]$_{S'}$	⇒	V	Prep	[S']$_{NP}$
nosotros	vamos	a	nosotros	pintamos			vamos	a	pintar
1	2	3		4			2	3	4

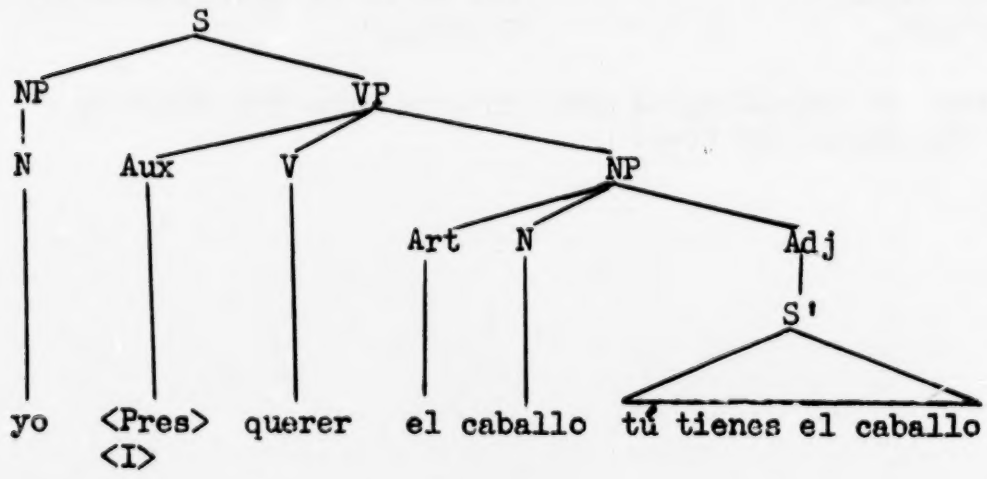
7.205. In the eleventh recording we find the first example of a complex sentence in which the embedded subordinate clause is used as a direct object:

quiere la caballo que tienes — 'I want the horse that you have.'
(for: Quiero el caballo que tienes.)

We shall assume the deep structure of this utterance to contain two underlying sentences:

1. Yo quiero el caballo. — 'I want the horse.'
2. Tú tienes el caballo. — 'You have the horse.'

We may show how one of these structures is embedded in the other in the deep structure by the following tree:



This structure undergoes transformations similar to those described in paragraph 7.1. Further transformations on the morphological level would generate the grammatical surface structure Quiero el caballo que tienes. However, because Michael has not completely mastered all the necessary morphological rules, we get his actual utterance: quiere la caballo que tienes. Stated as a transformational rule which would produce the grammatical utterance, we have:

NP_1 V NP_2 $[NP_1'$ V' NP_2' $]_{S'}$ $\Rightarrow$

yo quiero el caballo tú tienes el caballo

1 2 3 4

V NP $[S']_{Adj}$

quiero el caballo que tienes

2 3 4

The differences between this surface structure and the one generated by Michael can now be readily seen to be at the morphological, or possibly the phonological level.

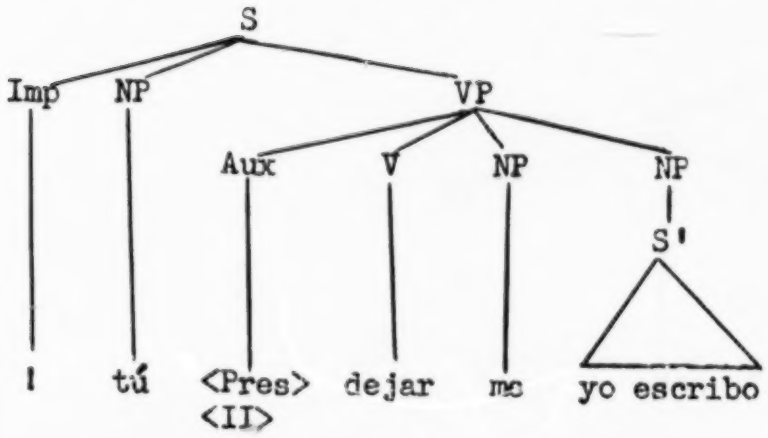
7.206. In recording twelve we have examples of utterances in which the embedding is in the form of the infinitive:

déjame scribir (for: Déjame escribir.) 'let me write.'

Assuming that the deep structure of this utterance is made up of the underlying sentences:

1. Déjame algo. 'let me do or have something.'
2. Yo escribo. 'I write.'

we may show the embedding of one sentence into the other by means of the following tree:



The transformations that take place are as follows:

(1) delete the NP', because of the identity of the NP' yo in S' with the object pronoun me in S; and
(2) change VP' in S' from the inflected form to the pronominalized infinitive.

As a result of these and other transformations we may generate the string:

Déjame escribir. 'Let me write.'

which may be written as a rule:

NP_1 V NP_2 [NP' V']$_{S'}$ $\Longrightarrow$ V NP_2 [S']$_{NP_3}$

tú deja me yo escribo déjame escribir

1 2 3 4 2 3 4

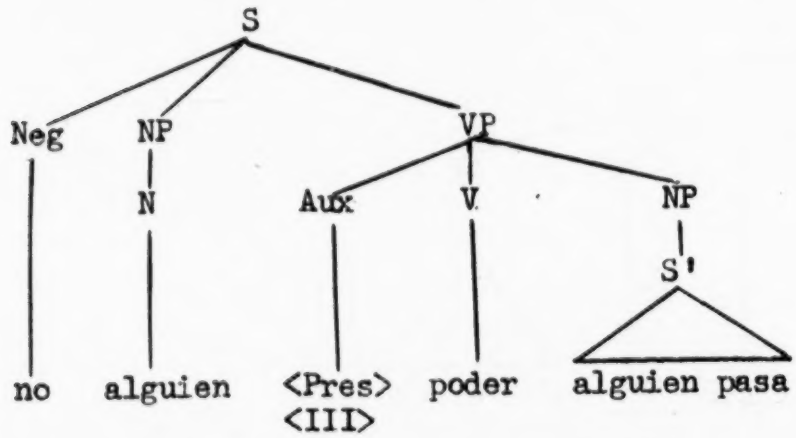
7.207. In the same recording we have another infinitive embedding, but with a slightly different structure in the independent clause:

No se puede pasar. 'You can't pass.'

In terms of the deep structure we interpret the following sentences:

1. Alguien no puede. 'Someone can't do it.'
2. Alguien pasa. 'Someone passes.'

A tree representing the deep structure takes the following shape:



This structure undergoes the following transformation processes:

(1) delete the NP' alguien in S' because it is identical to the NP in S; and
(2) convert the indefinite pronoun alguien in S to the reflexive pronoun se.

These transformations result in the surface structure:

No se puede pasar.

which may be represented by the following rule:

$$\text{Neg}\ \ NP_1\ \ V\ \ [\ NP'\ \ V'\ ]_{S'} \Longrightarrow \text{Neg}\ NP_1\ \ V\ \ [S']_{NP_2}$$

no alguien puede alguien pasa — no se puede pasar

1 2 3 4 — 1 2 3 4

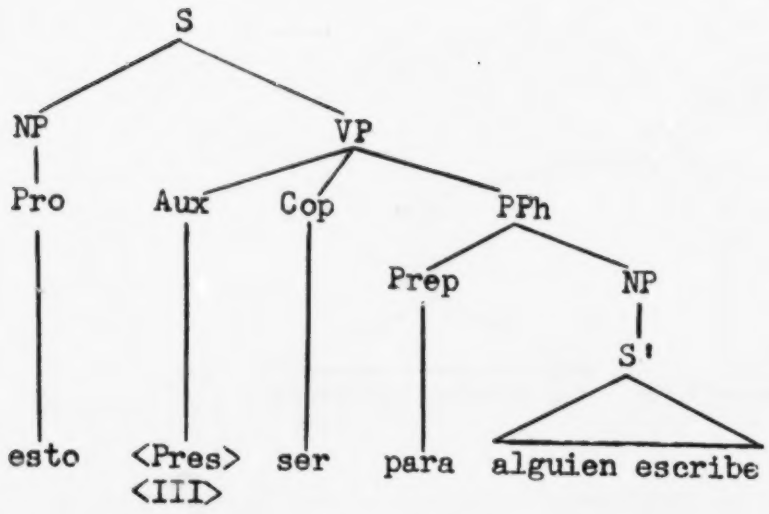
7.208. At this time we also find an embedded clause in which the infinitive is preceded by the preposition para, as in:

Es para escribir.	'It's for writing.'
Es para comer.	'It's for eating.'

The utterance Es para escribir may be interpreted as having two underlying sentences:

1. Esto es para algo.	'This is for something.'
2. Alguien escribe.	'Someone is writing.'

As a representation of this deep structure we may devise the tree:



The following transformations are then performed:

(1) delete NP' alguien; and
(2) change V' escribe to the nominalized infinitive escribir.

In terms of a rule this transformation may be written:

NP V Prep [NP' V']$_{S'}$ $\Longrightarrow$ V Prep [S']$_{NP}$

esto es para alguien escribe → es para escribir

1 2 3 4 → 2 3 4

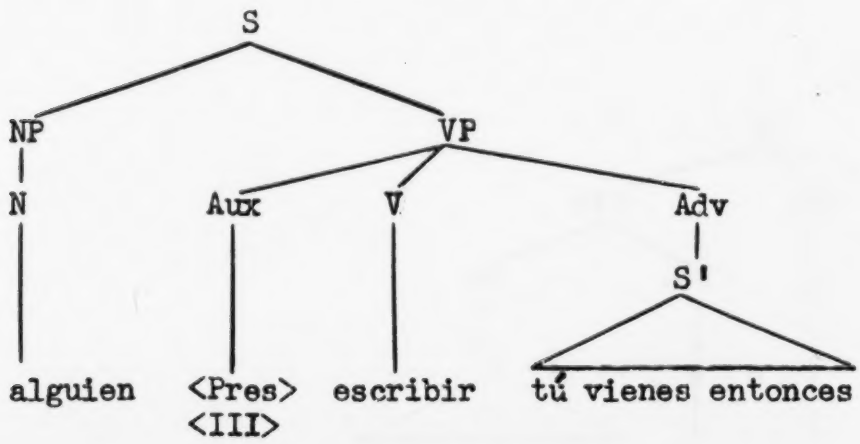
7.209. In this recorded sampling we find an example of an embedding involving the relator cuando which introduces an adverbial clause:

Papá dice es para escribir cuando tú vengas. 'Daddy says it's for writing whenever you come.'

There are several underlying sentences that may be interpreted for the deep structure of this utterance:

1. Papá dice algo. 'Daddy says something.'
2. Esto es para algo. 'This is for something.'
3. Alguien escribe entonces. 'Someone writes then.'
4. Tú vienes entonces. 'You come at that time.'

Beginning with the sentence containing the adverbial, which is the most deeply embedded, we may draw the following tree:



Transformations are as follows:

(1) replace the adverb entonces in S' with cuando; and
(2) move cuando to the front of S' where it serves as a relator.

The structure generated as a result of these and subsequent transformations is:

Alguien escribe cuando tú vengas. 'Someone writes whenever you come.'

If we embed this structure into the larger construction as discussed in paragraph 7.207, we have:

Es para escribir cuando tú vengas. 'It's for writing whenever you come.'

There remains one more embedding which, by the process described in paragraph 7.206, allows us to generate the surface structure:

Papá dice que es para escribir cuando tú vengas. 'Daddy says it's for writing whenever you come.'

Michael, however, has omitted the relator que. To represent this multiple embedding we have formulated the following transformation rule:

NP_1 V $[NP'\ Cop'\ Prep']_{S'}$, $[\ NP'\ V'\ Adv'\ ]_{S'}$

papá dice esto es para alguien escribe entonces

1 2 3 4

$[NP'\ V'\ Adv'\ ]_{S'} \Longrightarrow$

tú vienes entonces

5

NP_1 V $[S']_{NP_2}$ Prep $[S']_{NP}$ $[S']_{Adv}$

papá dice que es para escribir cuando tú vengas

1 2 3 4 5

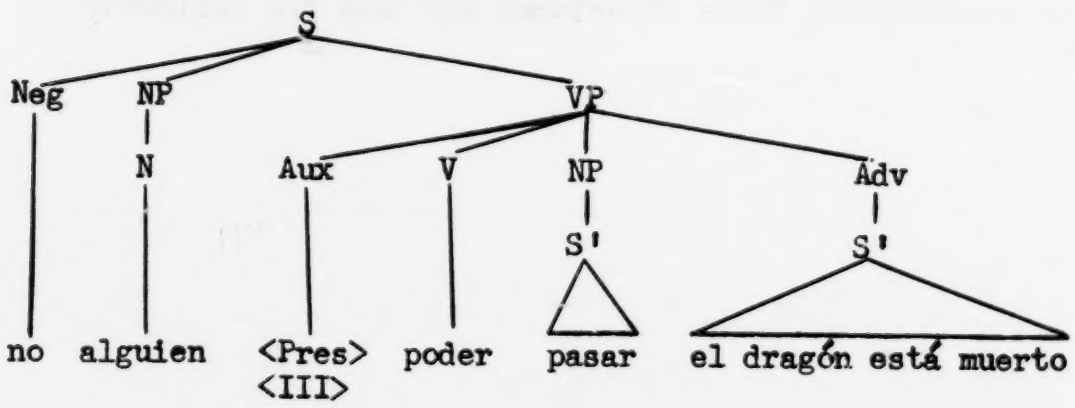
7.210. In the twelfth recording we find an example of an embedded clause introduced by the relator porque:

No se puede pasar porque está muerto.	'You can't pass because he's dead.'

In the deep structure of this utterance we may interpret the following underlying sentences:

1. El dragón está muerto.	'The dragon is dead.'
2. Alguien pasa.	'Someone passes.'
3. Alguien no puede (hacer) algo.	'Someone can't (do) something.'

The structure of the first portion of our sample utterance No se puede pasar has already been discussed in paragraph 7.207 of this chapter. We may now demonstrate how the sentence El dragón está muerto is embedded within the entire construction by the following tree:



The following transformations are needed:

(1) delete the subject NP' el dragón; and
(2) insert porque at the beginning of S' where it serves as a relator.

With these and subsequent transformations we may generate the string:

No se puede pasar porque está muerto.

The transformational process may be described with the following rule:

$$\text{Neg} \quad NP_1 \quad V \quad [\ NP' \quad V'\ ]_{S'} \quad [\ NP' \quad Cop' \quad Pred'\ ]_{S'} \quad \Rightarrow$$

no alguien puede alguien pasa el dragón está muerto

1 2 3 4 5

$$\text{Neg} \quad NP_1 \quad V \quad [S']_{NP_2} \quad [S']_{Adv}$$

no se puede pasar porque está muerto

1 2 3 4 5

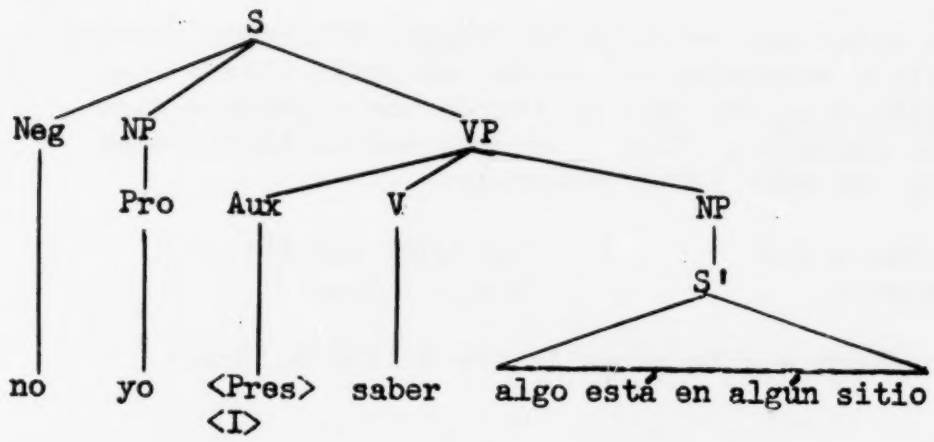
7.211. In recording thirteen we may observe an embedded clause introduced by the relator donde:

Yo no sé dónde está. 'I don't know where it is.'

From this surface structure we posit the following underlying sentences:

1. Yo no sé algo. 'I don't know something.'
2. Algo está en algún sitio. 'Something is in some place.'

A tree representing these structures may take the following shape:



The following transformations are involved:

(1) replace the adverbial en algún sitio 'in some place' with donde to give está donde; and
(2) move donde ahead of está where it now serves as relator to introduce the adverbial clause donde está.

With the optional deletion of the subject NP' algo, the clause donde está is now embedded in the main sentence and functions as a direct object of the verb sé. These and other transformations allow us to generate the surface structure:

Yo no sé donde está.

Structurally we have the following rule:

Neg NP_1 V [NP' Cop' Adv' $]_{S'}$ $\Longrightarrow$

no yo sé algo está en algún sitio

1 2 3 4

NP_1 Neg V [S'] $_{NP_2}$

yo no sé donde está

2 1 3 4

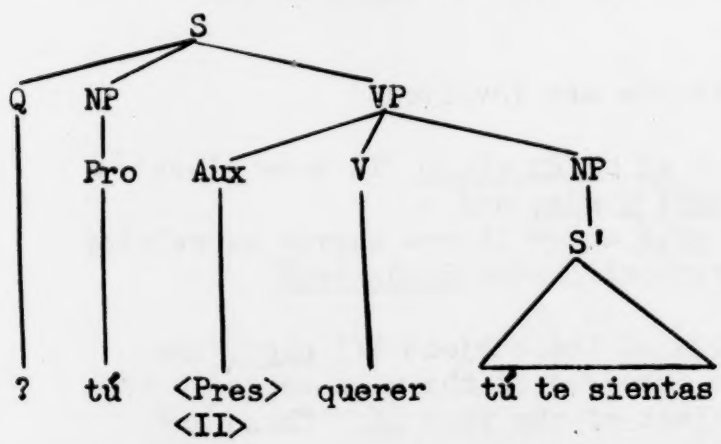
7.212. In this same recording we find an example of an embedded infinitive construction with an accompanying reflexive pronoun:

¿tú quieres se sentar? (for: 'Do you want to sit down?'
¿Tú quieres sentarte?)

Although the utterance produced by Michael indicates failure to apply certain morphological rules, we shall discuss the transformations involved here as though the utterance were an acceptable sentence. This utterance may be interpreted as containing the underlying sentences:

1. ¿Tú quieres algo? 'You want something?'
2. Tú te sientas. 'You sit down.'

The deep structure may be shown in the following tree:



The transformation rules to be applied are:

(1) delete the subject NP' tú in S';
(2) change the verb in S' to the nominalized infinitive sentar;
(3) attach the reflexive pronoun te to the infinitive as a suffix.

These transformations allow us to generate the string:

¿Tú quieres sentarte?

The rule for this transformation is:

$Q\ NP_1\ V\ [NP_1'\ V'\ NP_2']_{S'} \Rightarrow Q\ NP_1\ V\ [S']_{NP_2}$

? tú quieres tú sientas te ¿ tú quieres sentarte?

1 2 3 4 1 2 3 4

In recording sixteen we have another example of an embedded infinitive construction which contains a noun as direct object:

Yo quiero ver vaqueros. 'I want to see cowboys.'

The deep structure of this utterance may be interpreted as

having the following underlying sentences:

1.	Yo quiero algo.	'I want something.'
2.	Yo veo a los vaqueros.	'I see the cowboys.'

In recording eighteen we find more examples of the infinitive construction, now followed by a prepositional phrase:

Yo no quiero bajar con la pelota.	'I don't want to go downstairs with the ball.'
Yo quiero montar en el bici.	'I want to ride the bicycle.'

The increasing frequency and complexity of these embedded infinitive constructions indicate the child's developing competence.

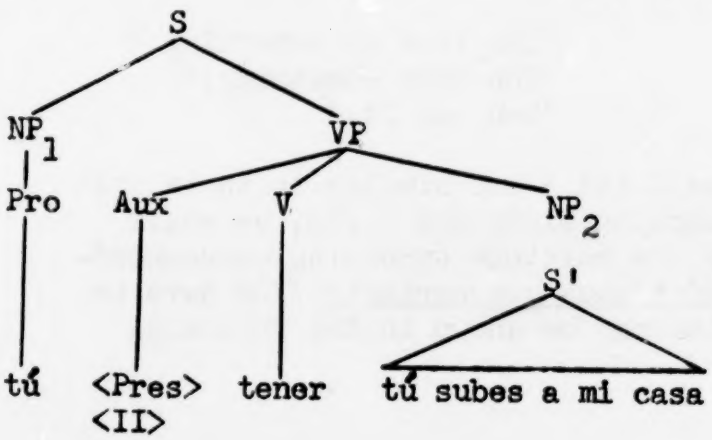
7.213. In recording twenty we find the first example of the use of <u>tener que</u> plus infinitive in the utterance:

Tienes que subir a mi casa.	'You have to go upstairs to my house.'

The underlying sentences in this example may be interpreted as:

1.	Tú tienes algo.	'You have something (to do).'
2.	Tú subes a mi casa.	'You go upstairs to my house.'

This construction is represented by the tree:



The transformation rules to be applied are:

(1) delete the subject NP' in S' because of its identity with the subject NP in S;

(2) change the V' subes in S' to the nominalized infinitive subir; and
(3) insert que to follow the verb tener.

This generates the structure:

Tú tienes que subir a mi casa.

Structurally the transformation rule is:

NP_1 V [NP' V' Prep' NP' $]_{S'}$ $\Longrightarrow$

tú tienes tú subes a mi casa

1 2 3

NP_1 V $[S']_{NP_2}$

tú tienes que subir a mi casa

1 2 3

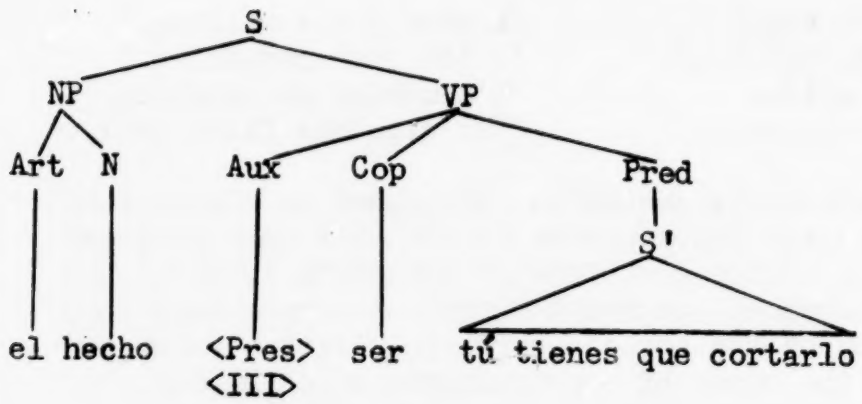
7.214. In this same recording we also find an example of an embedded construction introduced by the expression es que:

Es que tienes que cortarlo. 'It's that you have to cut it.'

This utterance may be interpreted as having these underlying sentences:

1. El hecho es algo. 'The fact is something.'
2. Tú tienes algo. 'You have something.'
3. Tú lo cortas. 'You cut it.'

Since underlying sentences 2 and 3 are similar to those discussed previously in paragraphs 7.205 and 7.213, we shall simply interpret these as one multiple embedding corresponding to the construction Tú tienes que cortarlo 'You have to cut it.' This construction may be shown in the following tree:



The transformation needed is:

(1) introduce the relator <u>que</u> at the beginning of the embedded construction.

An optional deletion of the subject NP <u>el hecho</u> and the subject NP' <u>tú</u> permit us to generate the surface structure:

Es que tienes que cortarlo.

This transformation rule may be written:

$$NP \quad Cop \; [NP_1' \; V' \;]_{S'} \; [NP_1' \; V' \; NP_2']_{S'} \Rightarrow$$

el hecho es tú tienes tú cortas lo

1 2 3 4

$$Cop \; [S']_{Pred} \; [S']_{NP_2'}$$

es que tienes que cortarlo

2 3 4

In the twenty-fourth recorded sampling we observe an example of a multiple embedding which is even more complex:

Voy a enseñarte que puedo hacer un avión que vuela mal. 'I am going to show you that I can make an airplane that flies badly.'

The deep structure of this utterance may be interpreted as having several underlying sentences:

1. Yo voy a (hacer) algo. 'I'm going to (do) something.'

2.	Yo te enseño algo.	'I show you something.'
3.	Yo puedo (hacer) algo.	'I can (do) something.'
4.	Yo hago un avión.	'I'm making an airplane.'
5.	El avión vuela mal.	'The airplane flies badly.'

All of these underlying sentences correspond to a series of embeddings which are incorporated in the utterance produced by our subject. Since each type of embedding involved has already been discussed, we mention this utterance here only as an indication of the child's growing ability to combine and manipulate the types of constructions which he has already learned.

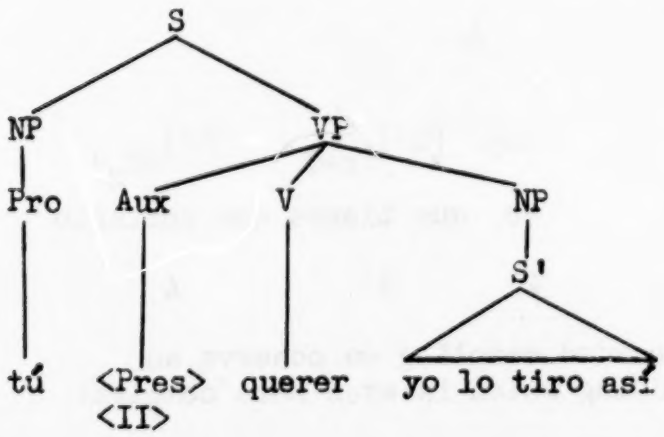
7.215. In this same recorded sampling Michael demonstrates control of the subjunctive form in an embedded clause:

¿Quieres que lo tire así?	'Do you want me to throw it this way?'

The deep structure of this utterance is interpreted as having the following sentences:

1.	¿Tú quieres algo?	'You want something?'
2.	Yo lo tiro así.	'I throw it in this manner.'

We may represent the deep structure with the following tree:



The following transformation rules are needed:

(1) since the subject NP' yo in S' is not identical to the subject NP tú in the main S, a transformation is triggered to generate the subjunctive verb form tire; and
(2) que is inserted as a relator to introduce the noun clause que lo tire así.

These transformation rules generate the surface sentence:

¿Quieres que lo tire así?

The structure rule for these transformations may be written:

Q NP V $[NP_1'$ V' NP_2' Adv$']_{S'} \Longrightarrow$

? tú quieres yo tiro lo así

1 2 3 4

Q V $[S']_{NP}$

¿ quieres que lo tire así?

1 3 4

7.216. We also find an example with the present participle embedded:

indios atacando 'Indians attacking'

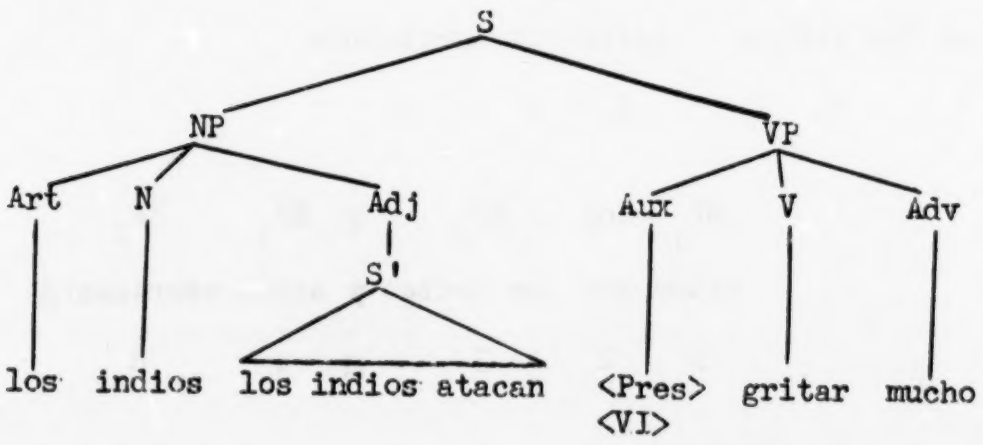
The deep structure of the gerundive form atacando may be interpreted as an underlying sentence:

Los indios atacan. 'The Indians are attacking.'

If we assume the underlying sentence to be part of a larger construction such as:

Indios atacando gritan mucho. 'Attacking Indians scream a great deal.'

we may represent the deep structure with the following tree:



The transformation rules involved here are:

(1) delete the identical NP' los indios in the S'; and
(2) change the V' atacan in S' to the gerundive form, atacando

These rules permit us to generate the string:

los indios atacando

as demonstrated by the following rule:

NP [NP' V']$_{S'}$ V Adv ⟹

los indios los indios atacan gritan mucho

1 2 3 4

NP [S']$_{Adj}$ V Adv

indios atacando gritan mucho

1 2 3 4

7.217. In recording twenty-five Michael optionally deletes the copula in one of two principal clauses coordinated, as is often observed in standard adult Spanish:

Estos son los indios y estos americanos. 'These are the Indians and these the Americans.'

The optional deletion of this copula is described in the following transformation rule:

[NP$_1$ Cop NP$_2$]$_S$ [NP$_1$ Cop NP$_2$]$_S$ ⟹

estos son los indios estos son americanos

1 2 3 4 5 6

NP$_1$ Cop NP$_2$ Y NP$_1$ NP$_2$

estos son los indios y estos americanos

1 2 3 Y 4 6

This example is notable not only for the awareness of the optional deletion rule in the second of two conjoined independent clauses, but also for the control of the concept of number and gender agreement.

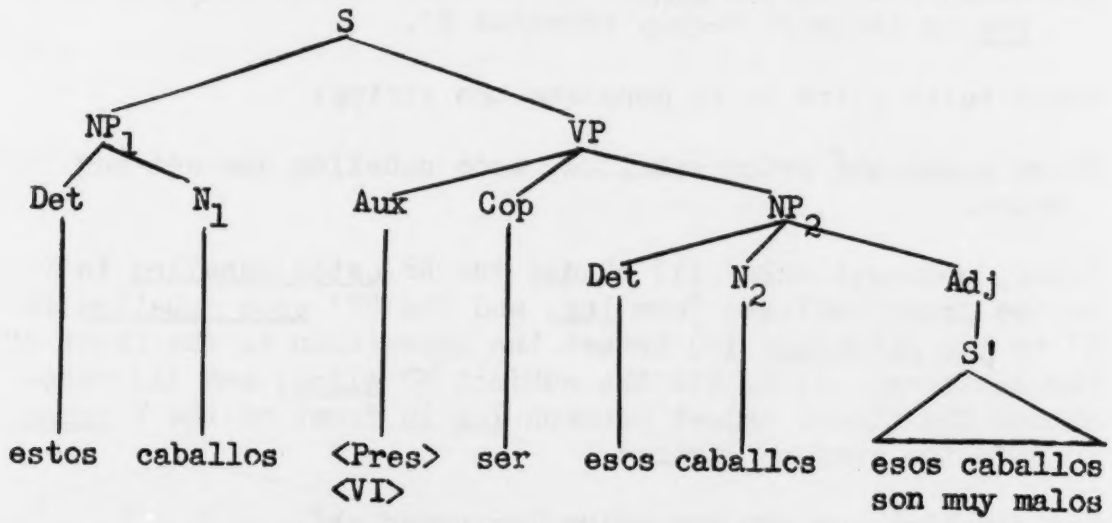
7.218. Recording twenty-eight contains an example of a noun phrase within an embedded clause used redundantly to relate to a noun phrase outside the clause. This apposition may be observed in standard Spanish.

Los caballos que son muy malos lo ponen ahí. (for: Los caballos que son muy malos los ponen ahí.)	'Horses that are very bad, they put them there.'

This utterance may be interpreted as <u>Ponen ahí los caballos, los caballos que son muy malos</u>, from which we may posit the following underlying sentences:

1. Ellos ponen estos caballos ahí.	'They put these horses there.'
2. Esos caballos son muy malos.	'Those horses are very bad.'
3. Estos caballos son esos caballos.	'These horses are those horses.'

The second of these sentences may be considered as an embedding in the third sentence, as shown by the following tree:



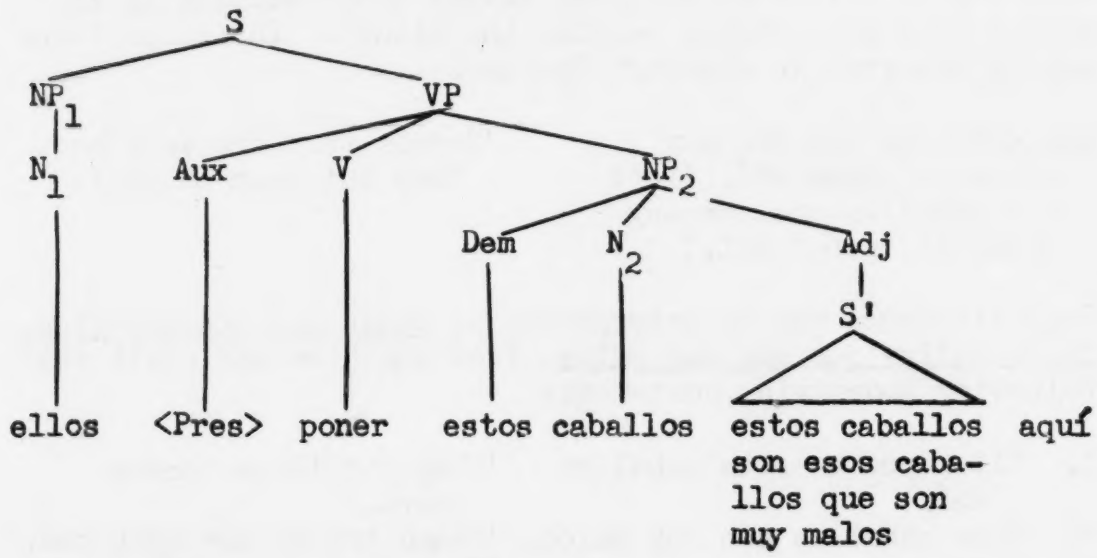
The transformation rules involved are:

(1) delete the NP' esos caballos in S' because of its identity with the NP_2 <u>esos caballos</u> in S; and
(2) insert <u>que</u> in front of the adjectival clause to serve as a relator.

These transformations allow us to generate the string:

Estos caballos son esos caballos que son muy malos.

which is then embedded in the total utterance, as illustrated by the following tree:



The transformations needed are:

(1) delete the NP_1' estos caballos in S' because of its identity with NP_2 in S; and
(2) delete the copula son in S' because of its identity with son in the more deeply embedded S'.

These rules allow us to generate the string:

Ellos ponen ahí estos caballos, esos caballos que son muy malos.

Later, optional rules (1) change the NP estos caballos in S to the pronominalized form los, and the NP' esos caballos in S' to los caballos; (2) invert the apposition to the front of the sentence; (3) delete the subject NP ellos; and (4) reposition the direct object pronoun los in front of the V ponen, to give the surface string:

Los caballos que son muy malos los ponen ahí.

The rule for these transformations may be written:

NP_1 V NP_2 . [NP_1' Cop' NP_2']$_{S'}$

ellos ponen estos caballos estos caballos son esos caballos

1 2 3 4

[NP_1' Cop' Adv' Adj']$_{S'}$ Adv $\Rightarrow$

esos caballos son muy malos ahí

5 6

[S']$_{NP}$ [S']$_{Adj}$ NP V Adv

los caballos que son muy malos los ponen ahí

4 5 3 2 6

7.219. In the thirty-fifth recording we find a new type of compounding in which Michael joins two independent clauses, one negative and one affirmative, by means of the conjunction sino.

no Steven sino Wendell (for: No es Steven sino Wendell.) 'It's not Steven but Wendell.'

The deep structure for this utterance may be interpreted as containing the following underlying sentences:

1. El no es Steven. 'He is not Steven.'
2. El es Wendell. 'He is Wendell.'

The transformation rule to be applied is:

(1) insert sino after the first sentence to join both sentences.

With the optional deletion of both subject NPs, and of Cop in the second S, this results in the surface structure:

No es Steven sino Wendell.

The rule for these transformations may be written as follows:

[Neg	NP_1	Cop	NP_2	$]_S$	[NP_1	Cop	NP_2	$]_S$	$\Longrightarrow$
no	él	es	Steven		él	es	Wendell		
1	2	3	4		5	6	7		

Neg	NP_2	sino	NP_2
no	Steven	sino	Wendell
1	4	sino	7

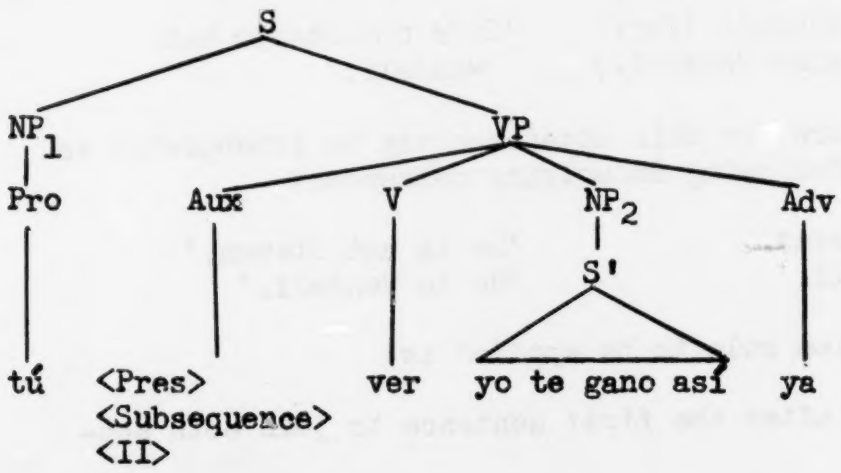
7.220. Recorded sampling thirty-six has an example of an embedded sentence introduced by the relator como:

Ya verás como te gano. 'Now you'll see how I'll beat you.'

The deep structure of this utterance may be interpreted as:

1. Tú verás algo ya. 'You'll see something now.'
2. Yo te gano así. 'I'll beat you this way.'

This structure may be shown in the following tree:



The transformation rules to be applied are:

(1) replace the adverbial así in S' with como; and
(2) move como to the front of S' where it serves as a relator introducing the noun clause como te gano.

These transformations generate the string:

Ya verás como te gano.

Our rule for these transformations is:

NP_1 $[NP_1'$ V' NP_2' Adv$']_S$, Adv $\Longrightarrow$

tú verás yo gano te así ya

1 2 3 4

Adv V $[S']_{NP}$

ya verás como te gano

4 2 3

In recording thirty-seven Michael produces an utterance with an embedded clause in which the subject and verb are inverted, as is often the case in adult speech:

¿Tú quieres ver cuando salta Tintín encima del hombre? 'Do you want to see when Tintín jumps on top of the man?'

The underlying deep structure of this utterance may be interpreted as containing the following sentences:

1. ¿Tú quieres algo? 'Do you want something?'
2. Tú ves algo. 'You see something.'
3. Tintín salta encima del hombre en este momento. 'Tintín jumps on top of the man at this moment.'

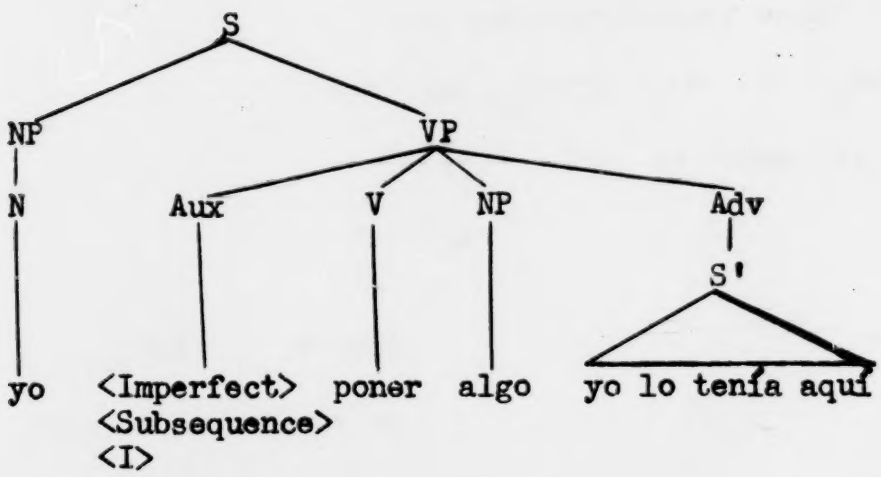
7.221. In recording thirty-eight we have an example in which Michael uses an embedded conditional clause introduced by the relator **si**:

Si lo tuviera aquí ponía (for: Si lo tuviera aquí, lo pondría.) 'If I had it here, I would place it.'

From this utterance, we may interpret the following underlying sentences:

1. Yo pondría algo. 'I would place something.'
2. Yo lo tenía aquí. 'I had it here.'

This can be shown in the following tree:



The transformation needed is as follows:

(1) insert <u>si</u> at the beginning of the S' to serve as a relator.

The introduction of the conditional relator <u>si</u> triggers the morphological transformations necessary to generate the past subjunctive <u>tuviera</u>, to give <u>si lo tuviera aquí</u>. Other, optional transformations permit us to generate the surface structure:

Si lo tuviera aquí, lo pondría.

In our example, however, Michael uses the imperfect form <u>ponía</u> instead of the conditional, a practice which may be observed even in standard Spanish. (See our discussion about this point in Chapter 4.) Stated as a rule, we have:

NP_1 V NP_2 $[NP_1'$ V' NP_2' Adv'$]_{S'}$ $\Longrightarrow$

yo pondría algo yo tenía lo aquí

1 2 3 4

$[S']_{Adv}$ V

si lo tuviera aquí ponía

4 2

Unlike other utterances where verb inflections were sufficiently unambiguous to permit deletion:

Fué el caballo corriendo y después lo cogieron y iba atado y se hacía ...

the following examples taken from recordings thirty-seven through forty-three do not show such deletion either because of ambiguity or because a contrast is intended:

Aquí está el submarino y aquí está la serpiente.	'Here's the submarine and here's the snake.'
Tú eres más pequeña y yo soy más grande.	'You are smaller and I am bigger.'
Gina tenía una parte y yo tenía otro parte. (for: ... otra parte)	'Gina had one part and I had another part.'

In recording forty-seven, however, we find another example of subject deletion where ambiguity does not occur because of verb inflections:

We summarize in Figure 16 all types of conjoined syntactic constructions discussed in this section. As in the case of the other grammatical subsystems and constituents, we shall list all structures found in Michael's output and compare them with those of the other children. Those structures not found in Michael's data but observed in the output of the other subjects will be added and indicated accordingly.

FIGURE 16. First occurrences of various compounded and embedded sentences in all children

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7.201 Compounding; both copula forms omitted

$[NP_1\ Cop\ NP_2]_S\ [NP_1\ Cop\ NP_2]_S \Rightarrow NP_1\ NP_2\ \underline{y}\ NP_1\ NP_2$

M: ese dos scompetas y esa dos libros (5)

7.202 Compounding; both copula forms included

$[NP_1\ Cop\ NP_2]_S\ [NP_1\ Cop\ NP_2]_S \Rightarrow$

$NP_1\ Cop\ NP_2\ \underline{y}\ NP_1\ Cop\ NP_2$

M: éste es el casa y éste es el árboles (8)
C: ésta es un caballo y ésta es un policía (15)

7.203 Compounding; different verb types used

$[Neg\ NP\ Cop\ Adv]_S\ [NP_1\ V\ NP_2]_S \Rightarrow NP\ Neg\ Cop\ \underline{y}\ V\ NP_2$

M: la piedra no está y mira esto (8)
S: está muy grande y el niño no le gusta este (16)

FIGURE 16--Continued

7.204 ir a plus infinitive

$$NP\ V\ Prep\ [NP'\ V']_{S'} \Longrightarrow V\ Prep\ [S']_{NP}$$

M: Vamos a pintar. (8)
O: va a cebar (5)
N: yo vas a decir en español quien juega (10)
S: vamos a cortar una torre (5)

7.205 Use of que to introduce relative clause

$$NP\ V\ NP\ [NP'\ V'\ NP']_{S'} \Longrightarrow V\ NP\ [S']_{Adj}$$

M: quiere la caballo que tienes (11)
O: una gatitos que están en la cama (11)
N: quieres ver todos que hay en la agua (1)
C: yo no sé que es esto (17)

7.206 dejar plus infinitive

$$NP_1\ V\ NP_2\ [NP'\ V']_{S'} \Longrightarrow V\ NP_2\ [S']_{NP_3}$$

M: Déjame scribir. (12)

7.207 poder plus infinitive

$$Neg\ NP_1\ V\ [NP'\ V']_{S'} \Longrightarrow Neg\ NP_1\ V\ [S']_{N}$$

M: No se puede pasar. (12)
O: porque ese burriquito no se puede estar quieto (10)
N: soy el más niña que puede correr más (12)

7.208 ser para plus infinitive

$$NP\ V\ Prep\ [NP'\ V']_{S'} \Longrightarrow V\ Prep\ [S']_{NP}$$

M: Es para escribir. (12)
O: para matar ... niña (5)
C: Es para leer. (19)

7.209 Use of cuando to introduce relative clause

$$NP_1\ V\ [NP'\ Cop'\ Prep']_{S'}\ [NP'\ V'\ Adv']_{S'}\ [NP'\ V'\ Adv']_{S'} \Longrightarrow$$

$$NP_1\ V\ [S']_{NP_2}\ Prep'\ [S']_{NP}\ [S']_{Adv}$$

7.210 Use of <u>porque</u> to introduce relative clause

$$\text{Neg } NP_1 \text{ V } [NP' \text{ V}']_{S'}, [NP' \text{ Cop}' \text{ Pred}']_{S'}, \Longrightarrow$$
$$\text{Neg } NP_1 \text{ V } [S']_{NP_2} [S']_{Adv}$$

M: No se puede pasar porque está muerto. (12)
O: porque yo soy maestra (10)

7.211 Use of <u>donde</u> to introduce relative clause

$$\text{Neg } NP_1 \text{ V } [NP' \text{ Cop}' \text{ Adv}']_{S'} \Longrightarrow NP_1 \text{ Neg V } [S']_{NP_2}$$

M: Yo no sé donde está. (13)
O: ella sabe mucho de donde está tres años (9)
N: Yo quiero saber donde está. (11)

7.212 <u>querer</u> plus infinitive with reflexive pronoun

$$Q \text{ } NP_1 \text{ V } [NP_1' \text{ V}' \text{ } NP_2']_{S'} \Longrightarrow Q \text{ } NP_1 \text{ V } [S']_{NP_2}$$

M: ¿Tú quieres se sentar? (13)
O: que no quiero hablar más (8)
N: Yo quiero ver esto otra vez. (4)
S: Mi amigo no quiere venga (for: ... venir) (19)
C: Yo no quiero comer. (19)

7.213 <u>tienes que</u> plus infinitive plus adverbial

$$NP_1 \text{ V } [NP' \text{ V}' \text{ Prep}' \text{ NP}']_{S'} \Longrightarrow NP_1 \text{ V } [S']_{NP_2}$$

M: Tú tienes que subir a mi casa. (20)
O: tiene que venir (19)

7.214 <u>es que</u> plus <u>tienes que</u> plus infinitive

$$NP \text{ Cop } [NP_1' \text{ V}']_{S'}, [NP_1' \text{ V}' \text{ } NP_2']_{S'} \Longrightarrow$$
$$\text{Cop } [S']_{Pred} [S']_{NP_2'}$$

M: Es que tienes que cortarlo. (20)

7.215 <u>querer</u> plus relative clause using subjunctive

$$Q \text{ NP V } [NP_1' \text{ V}' \text{ } NP_2' \text{ Adv}']_{S'} \Longrightarrow Q \text{ V } [S']_{NP}$$

M: ¿Quieres que lo tire así? (24)
O: Mi mamá no quiere que yo coma mucho caramelo. (16)

7.216 NP with modifying gerundive

$NP\ [NP'\ V']_{S'}\ V\ Adv \Longrightarrow NP\ [S']_{Adj}\ V\ Adv$

M: los indios atacando (24)

7.217 Compounding; one of copula forms optionally deleted

$[NP_1\ Cop\ NP_2]_S$ Y $[NP_1\ Cop\ NP_2]_S \Longrightarrow$

$NP_1\ Cop\ NP_2$ Y $NP_1\ NP_2$

M: Estos son los indios y estos americanos. (25)

7.218 Embedding of an appositive

$NP_1\ V\ NP_2\ [NP_1'\ Cop'\ NP_2']_{S'}\ [NP_1'\ Cop'\ Adv'\ Adj']_{S'}\ Adv \Longrightarrow$

$[S']_{NP}\ [S']_{Adj}\ NP\ V\ Adv$

M: Los caballos que son muy malos lo ponen ahí. (28)

7.219 Contradictory use of <u>no es ... sino</u>

$[Neg\ NP_1\ Cop\ NP_2]_S\ [NP_1\ Cop\ NP_2]_S \Longrightarrow Neg\ NP_2$ <u>sino</u> NP_2

M: no Steven sino Wendell (35)

7.220 Use of <u>como</u> to introduce relative clause

$NP_1\ V\ [NP_1'\ V'\ NP_2'\ Adv']_{S'}\ Adv \Longrightarrow Adv\ V\ [S']_{NP}$

M: Ya verás como te gano. (36)

7.221 Compounding with <u>si</u>

$NP_1\ V\ NP_2\ [NP_1'\ V'\ NP_2'\ Adv']_{S'} \Longrightarrow [S']_{Adv}\ V$

M: si lo tuviera aquí ponía (38)
O: Si viene tarde yo me voy a portería. (18)
N: Yo no puede hacer nada si tu está hablando tanto. (17)

7.3 Discussion of the comparative development of compounded and embedded sentences

Figure 17 shows the observed order of appearance of compounded and embedded structures for all children. The symbol 01 corresponds to the structure symbolized 7.201 in the text of this chapter.

FIGURE 17. Comparison of the observed order of occurrence of compounded and embedded sentences

Recording	M	O	N	S	C
1			05		
•					
•					
4			12		
5	01	04,08			
•					
•					
8	02,03,04	12			
9		11			
10		07,10	04,09		
11	05	05	11		
12	06,07,08, 09,10		07		
13	11				
•					
•					
15					02
16		09,15		03	
17			21		05
18		21			
19		13		12	07,12
20	13,14				
•					
•					
24	15,16				
25	17				
•					
28	18				
•					
35	19				
•					
36	20				

The criteria for comparing the development of conjoined sentences in the data of our subjects will be the type and the complexity of the constructions that are conjoined. We shall discuss four principal types of conjoining: (1) compounding, (2) embedding of infinitives, (3) embedding of relative clauses, and (4) gerundives. As observed in our discussion of NP and VP constituents and other grammatical subsystems, there is a high correlation between the number of different types of conjoined constructions and the overall productivity of the learner.

7.31 Compounding

The following types of compounding may be summarized from the data of our subjects:

FIGURE 18. Types of compounding

Type	Recording Number				
	M	O	N	S	C
(Cop) y (Cop)	5				
Cop y Cop	8				15
Cop y V	8			16	
Cop y (Cop)	25				
no ... sino	35				

In comparison with the five different types of compounding found in Michael's data, there is only one type observed in the utterances of each of two other children, and none in the two remaining children. With the exception of the fifth type of compounding where sino is used, all other compounded sentences are conjoined by means of the coordinate conjunction y. Much of the compounding is the result of the juxtaposition of constructions involving the copula. Using the order of observed occurrence indicated in Figure 18, we may describe these compounds as follows: The first type represents the conjoining of equational constructions where the copula form has been omitted. Although the copula has been used by all children in simple sentences, these forms may be omitted in the process of compounding which results in so-called pivot-like constructions. The second type shows the copula inserted, but as our examples show, there is inconsistency

in person-number agreement, indicating a lack of mastery of this form. The third type of compound shows a copula construction conjoined with a sentence using a different type of verb. This suggests that by the eighth recording the processing of compounding may be achieved by Michael using different types of verbs in each of the sentences conjoined. The fourth type of compounding indicates the child's ability to delete optionally one of the forms in this parallel construction just as we may observe in standard adult Spanish. The last type shown in Figure 18 represents a more advanced type of construction in which a negative clause is compounded with a contradictory clause by means of the conjunction sino.

It must be pointed out here that in the data of Opal and Niki, the two most productive subjects after Michael, there were no compounded constructions observed. It is difficult to account for this phenomenon, especially since both of these children produced a wide variety of embedded sentences which we feel are representative of greater linguistic development than are compounded constructions. It is suggested that techniques designed especially to elicit compounds would have resulted in numerous examples from these subjects.

7.32 Embedding of infinitives

Constructions with the embedding of infinitives are more numerous in Michael's data than in that of any of the other children.

FIGURE 19. Verb constructions used with embedded infinitives

Symbol	Structure	Recording Numbers				
		M	O	N	S	C
7.204	ir a	8	5	10	5	19
7.206	dejar	12				
7.207	poder	12	10	12		
7.208	ser para	12	5			19
7.212	querer	13	8	4	19	19
7.213	tener que	20	19			

As shown in Figure 19, only Michael can be credited with embedded infinitives preceded by dejar. All other children have at least two types of embedded infinitive constructions. In Opal's data we find all but one of the constructions used by Michael, as well as several examples of saber plus infinitive. Niki has ir a, poder, and tener que with the infinitive in the tenth, twelfth, and fourth recordings respectively. Stan has infinitive embeddings involving ir a in recording five, and querer in recording nineteen. Carl is credited with infinitive constructions involving ser para and querer, both observed in the nineteenth recording.

In addition to the relative lateness in appearance of these structures, we note in Figure 20 certain indications of a similar order of learning in our subjects.

FIGURE 20. Sequence of embedded infinitive constructions

Order	Verb Constructions				
	Michael	Opal	Niki	Stan	Carl
1st	ir a	ir a ser para	querer	ir a	ser para querer
2nd	dejar poder ser para	querer	ir a	querer	
3rd	querer	poder	poder		
4th	tener que	tener que			

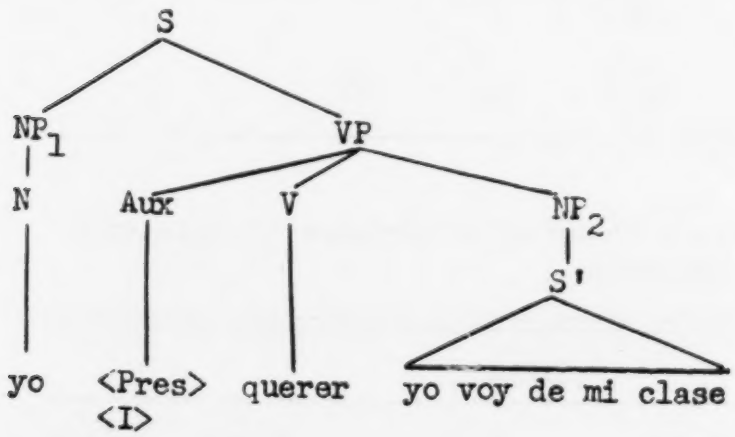
Embedded infinitive constructions with ir a, usually expressing the periphrastic future, are among the first to appear. Querer is the only verb to be used with an infinitive by all five subjects, and occurs relatively early. Ser para plus infinitive appears in the least productive child, as well as in the two most productive, indicating that it may be one of the first such constructions to be learned, even though it does not appear at all in the data of the other two children. Poder occurs with an embedded infinitive in the data of our three most productive subjects. Tener que plus infinitive occurs in the two most productive subjects, and is the last of such constructions to appear in their data. Dejar is used in an embedded infinitive construction by only one child, our most productive, but it does not occur particularly late. We may suggest, then, that among

the embedded infinitive constructions discussed, ir a is one of the first to be learned; then come querer, ser para and poder, all appearing around the same time, in no fixed order; and tener que seems to be learned last.

An intermediate step in the development of embedded infinitive constructions may be indicated by the following utterance found in the data of one of our subjects:

yo quiero voy de mi clase 'I want I go out of my class'

This utterance may be considered an intermediate step between the deep structure represented as two sentences, one embedded in the VP of the other:



and the surface structure:

Yo quiero ir ... 'I want to go ...'

7.33 Embedding of relative clauses

The types of relators used to introduce the embedded clauses are shown in Figure 21. The number of different relators used by each child correlates with his overall productivity. Thus, Michael uses six relators, Opal five, Niki four, and Carl one. The absence of relative clauses in Stan's data may be attributed to limitations in our eliciting techniques. Although there is too little evidence to determine any specific chronological order in the learning of these types of embedded clauses as introduced by the particular relators, there are some noteworthy tendencies concerning their overall sequencing in the data, as shown in Figure 22.

FIGURE 21. Relators used in embedded clauses

Symbol	Relator	Recording Numbers				
		M	O	N	S	C
7.205	que	11	11	1		17
7.209	cuando	12	16	10		
7.210	porque	12	10			
7.211	donde	13	9	11		
7.220	como	36				
7.221	si	38	18	17		

FIGURE 22. Comparative order of occurrence of relators in all subjects

Order	Relators				
	Michael	Opal	Niki	Stan	Carl
1st	que	donde	que		que
2nd	cuando porque	porque	cuando		
3rd	donde	que	donde		
4th	como	cuando	si		
5th	si	si			

Que introducing a relative clause is the first relator used by three out of five children. Three of the five subjects also use donde among the first relators, and the same children use si as the last relator observed in their data. Cuando appears relatively early in two children, later in a third, and not at all in the two least productive subjects. Como is observed late, recording thirty-six, in Michael's data, and not at all in the data of the four other subjects.

At this point it is interesting to make a comparison with the observed order of question particles (See Figure 15). Qué and dónde appear earliest and cuánto, cuál and cuándo appear among the last. In the use of corresponding relators, que and donde also appear early, along with qué and dónde, whereas the relators cuanto and cual do not appear at all. This would seem to correspond with the late occurrence of the question particles cuánto and cuál. We find inconsistent, however, the early occurrence of the relator cuando and the almost total lack of examples showing the interrogative word cuándo. There is only one example of a KD question using cuándo observed in Michael's data and this occurs in recording thirty-six. In the case of question word quién, which is the fourth to be observed among interrogatives, the corresponding relator quien is not found at all in any of the children's examples of embeddings. This phenomenon may be accounted for by the fact that the use of quien 'who' as a relator is much more restricted in Spanish than it is in English. In Spanish the relator que is often used meaning 'who': Es una muchacha que juega conmigo 'She is a girl who plays with me.'

Only two children, Michael and Opal, use the subjunctive in relative clauses following the verb querer. The embedding of the gerundive form, indios atacando, is observed only in the speech of Michael during the second year.

As for inversion in S', we have examples from the data of Michael and Opal: porque está mi mamá in Opal's thirteenth recording, and cuando salta Tintín by Michael in recording thirty-seven.

Another important criterion for determining development is the embedding of clauses within other embeddings. Examples are found in the three most productive children: Michael, Opal, and Niki. In some of the multiple embeddings observed there are as many as five underlying sentences which could be interpreted in the deep structure.

7.34 Hypothetical order of learning of compounded and embedded sentences

A general observation on the conjoined syntactic constructions analyzed in this section leads us to suggest the following hypothetical order of learning:

(1) Compounding of pivot-like constructions by means of the conjunction y

(2) Compounding of short clauses containing the copula

(3) Compounding of more complex clauses, each containing different types of verbs

(4) Compounding with optional deletion of one of two similar types of verbs

(5) Compounding of a negative and contradictory clause using the construction no ... sino

(6) Embedding of infinitives involving ir a, querer, poder, dejar, ser para and tener que

(7) Embedding of clauses with indicative verbs in S' showing a tendency for the relators que and donde to occur first and the relator si to occur late

(8) Embedding of clauses with subjunctive verbs in S'; first in present tense, then in the past

(9) Multiple embeddings using a series of relators and/or a combination of the conjoined syntactic constructions described in this chapter

N O T E S

[1]In our tree diagrams we shall dispense with naming the constituents of the embedded construction and simply represent S' as a triangle under which will be indicated the intermediate structure generated thus far, assuming the application of certain morpholcgical transformations necessary to generate an acceptable utterance.

[2]Since our purpose here is to show permutations which result in surface structures, we shall simplify our transformation rules by combining the Aux constituent with the V.

C H A P T E R 8

CONCLUSIONS AND IMPLICATIONS

8.1 Research design

By using techniques similar to those in native-language investigations, we have studied the process by which several monolingual, American-English-speaking children of different ages randomly learned Spanish while living in a natural environment, in Madrid during the period 1964-1966. In the interest of developing sound research techniques, we conducted a one-year pilot study on one child, who was four years one month old when the family arrived in Madrid. Findings of this pilot study enabled us to formulate hypotheses and revise our methods for eliciting productive speech samples.

Our group study during the second year included four children between the ages of five and a half and six and a half, and also continued the collection of data from our four-year-old pilot subject. Periodic samplings of the children's Spanish utterances were tape recorded and transcribed, then analyzed according to a transformational-generative model of grammar. An important aspect of our research has been the comparison of the twenty-month sampling of our four-year-old with the data obtained from our four six-year-olds during the ten-month period of our group study.

Findings related to research design and methodology indicate the need for a more effective set of procedures for collecting and processing such large amounts of data, so as to provide a more complete description of various aspects of language development.[1]

Our transformational-generative model of grammar has proved effective for describing and classifying the utterances produced by our subjects. We do recognize certain limitations involved in applying this type of linguistic model to a developmental study. An adequate description of a child's competence is even more difficult than the account of an adult native speaker's linguistic competence because the child's intuition of what is grammatical is generally not available. Furthermore, the child's competence is in a state of constant change and development. However, our findings indicate that transformational processes, as reflected in the utterances of our subjects, do indeed have some psychological reality.

8.2 Summary of principal linguistic findings

Before answering the question of whether or not we have found support for our hypotheses, we shall summarize and interpret the principal linguistic findings in our analyses of specific constituents and grammatical subsystems. In our studies of each of the grammatical subcategories (NPs, VPs, etc.), the results show that the number and complexity of the components are highly correlated with the overall productivity of the child. Productiveness, in turn, is directly correlated with the number of hours the child spent on a regular basis in an environment where Spanish was used.

8.21 The noun phrase

A comparison of the development of the NP constituent in all our subjects was made in terms of the basic processes of combining and embellishing the individual components that make up this basic sentence unit. Our findings on the NP may be summarized as follows:

(1) The earliest NPs appear as single-word utterances, usually a noun or a pronominalized demonstrative.

(2) Short noun phrases appear next, usually of two, three or even four words, in which a noun is combined with one of four kinds of pre-noun elements: Dem, Art, Poss and/or LAdj. At this point in the study of children's second-language learning, we cannot make the claim that there is a stage of pivot grammars such as that suggested by investigators of first-language acquisition. We can, nevertheless, offer as limited evidence the existence of short pivot-like constructions in our data on second-language learning. Occurring simultaneously with these constructions we find in the data of some of the children one-word utterances of the holophrastic type, as well as short but complete sentences.

(3) As more components are added to the noun phrase, the number of combinatory possibilities increases. This development is generally limited at first to the N and any elements preceding the N.

(4) The concept of placing adjectives and other modifiers after the noun in Spanish is generally learned after the Det element is established.

(5) Compounding of NPs may occur early, with almost exclusive use of the coordinate conjunction y.

(6) The use of prepositions results in the creation of the PPh, which may be observed early in the data of some of the children. However, the modification of a N or NP by a PPh appears only after the concept of post-noun modification is well established. The first prepositions are en, de and a.

(7) Although the placement of modifiers after the noun is learned by all the children, there is no evidence that any of the subjects can distinguish the contrastive uses of the small number of adjectives that may either follow or precede the noun in Spanish, depending upon meaning.

(8) The development of post-position modification represents a significant indicator of linguistic competence. There appears to be a definite progression of these modifiers: single adjective, adjective modified by an adverb, prepositional phrase, compounding of adjectives, embedding of infinitives and relative clauses.

8.22 The verb phrase

As in the case of NPs, the earliest VPs consist of a single word. Then constructions of two, three and more words appear as the child develops linguistic ability. We may summarize our findings on the VP as follows:

(1) The first VPs are single forms, usually imperatives.

(2) VPs become more extensive when these one-word imperatives develop into two- and three-word constructions, in which the imperative is usually combined with an adverb, a noun or pronominalized demonstrative. The use of the negative is observed from the beginning in imperative constructions. It is not until much later, however, that appropriate morphological endings may be found in the use of negative imperatives.

(3) Copula constructions appear shortly after or in some cases at the same time as imperatives. The earliest copula constructions occur in the data of some children as pivot-like structures with the copula form omitted. For a time there appeared, in some of the data, a complementary occurrence of pivot-like utterances with the copula omitted, and copula sentences including the verb but with the subject omitted. Early copula constructions clearly show an undifferentiated use of ser to express meanings that require both ser and estar in adult speech.

(4) The first verbs other than the imperative and the copula are observed in the present indicative form. The sequence of tenses is not conclusive but there is evidence indicating that the perfective, preterite and the imperfect follow the indicative. The concept of future time is expressed by the construction ir a plus infinitive, and the actual future tense is observed late in the data of the two children using this tense. The future tense, when ultimately used, expresses probability as well as futurity. The conditional tense is practically non-existent in our sampling of utterances. The present subjunctive is found in the data of three of the children rather late in their learning of Spanish, followed by a few examples of the past subjunctive in the output of one child.

(5) The learning of person-number markers seems to follow the sequence of III first, then II and I, then VI, IV and V.

(6) As stated in connection with the NP and with other subsystems, the expansion of modifiers and complements is highly representative of linguistic development. As with the NP, the general sequence is first single words, then phrases and complete clauses.

(7) The use of pronouns is highly complex and varied in our subjects. We find early use of personal pronouns as subjects, and of pronominalized demonstratives as both subjects and objects. However, although direct object pronouns appear in early imperative constructions, the manipulation of pronouns as direct objects is not observed immediately. Still later is the combined use of both direct and indirect object pronouns. In some children this combined usage does not appear at all. Reflexive pronouns are often used in place of direct object pronouns.

8.23 The imperative

We have stated that the earliest verb forms to appear are imperatives. Our findings on imperative constructions may be summarized as follows:

(1) Imperatives occur first as single forms which are then followed by utterances of two, three or more words. In addition to the verb, these constructions contain direct and indirect objects and adverbial complements.

(2) Negative imperative constructions appear early and may be considered acceptable from a syntactic point of view. It is not until much later, however, that we find these verb forms with the appropriate morphological endings.

(3) Only the form vamos was used as a hortatory imperative. In the case of regular verbs, where the imperative and indicative forms are not the same, there were no examples to show that any of the children had learned this usage.

(4) Early imperative constructions contain both direct and indirect pronoun forms suffixed to the verb, but there is no evidence that the children can use these pronouns discriminately until much later. It is suggested that these early constructions are acquired as a single lexical item.

8.24 The interrogative

SN questions requiring only an interrogative intonation are the earliest questions which may be observed, occurring even with utterances of one word. This type of interrogation may be found in utterances that become progressively more complex. Except for a very few examples appearing late in the data, all SN questions are without inversion. The fact that inversions do not occur until very late and in limited number supports the theory that base structures are learned before the transformation requiring inversion occurs.

The number of interrogative particles used in KD questions is also highly correlated with overall productivity. Qué and dónde are the first to appear, and cuándo, produced by only one child, is decidedly the last according to our data. Other particles show less consistency in their order of occurrence except for quién, corresponding to a human subject, which generally appears after the particles cómo and cuánto. Cuál, which shows a greater degree of specificity because it questions one of a definite limited set, shows up late, and in the data of only three children. This tendency to use words of greater specificity late conforms with the concept of progressive differentiation which is hypothesized by some writers as a psycholinguistic universal (Osgood 1966).

Another finding of significance is the order of occurrence of particles preceded by prepositions. The use of particles alone always occurs before constructions with the prepositions: qué precedes por qué, de qué, para qué and a qué;

cuál comes before a cuál and dónde before a dónde. This supports the hypothesis that base structures are learned before those transformations requiring additions such as prepositions.

We also consider noteworthy the occurrence of utterances in which a complete KD inversion has not taken place, such as ¿Qué tú tienes aquí? 'What you have here?' These constructions appear to represent intermediate structures. (Cf. Brown 1968 and Ravem 1970 for a discussion on similar phenomena in English.)

Receptive competence is indicated by all the children who respond appropriately to questions containing a wide variety of interrogative particles. It is also noteworthy that all subjects give evidence of understanding each particle before it occurs productively in actual utterances. This would support the widely held theory that understanding comes before production.

8.25 Compounded and embedded sentences

Our findings show that compounding occurs earlier than embedding in the output of two children. The lack of examples of compounding from the other children is believed to be a result of limitations on the eliciting techniques employed. Multiple embeddings appear late and are shown in the data of only three subjects.

Among the first embeddings are the infinitives which are used with structures like querer, poder, deber, ser para and tener que. Although all types do not appear for all children in this study, it is suggested that they precede the embedding of relative clauses. Embedded clauses appear in an advanced stage of complementation as adjectivals, adverbials and nominals. Que predominates among the first relators, along with donde. Si appears latest and in the output of three children. Other relators in our sampling (como, cuando, cuanto) do not appear in any particular order, which indicates that their learning may be random.

Finally, the use of the subjunctive in relative clauses is achieved by only two subjects and occurs late. In the data of one child, our most productive, we find some examples of the past subjunctive.

8.3 Hypothetical order of learning of structures

Some of the difficulties inherent in a partial treatment such as ours are summarized by Falk (1968:4):

> Few, if any, of the rules in the syntactic component are completely independent of the other rules. The formulation of one rule will invariably affect other rules in the grammar ... Because this is so, the construction of a sub-grammar, i.e., of some subset of the rules for a particular language, is a complicated task. Some of the rules in such a sub-grammar will inevitably be ad hoc since the limited nature of the undertaking excludes detailed consideration of all the linguistic facts which may affect the rules. No sub-grammar can ever be considered as the definitive treatment of the linguistic phenomena it describes ... Such grammars are tentative.

Because of the difficulties outlined above, we have not attempted to establish fixed stages of language acquisition. Instead, the language learning process is viewed as a continuum, with overlapping in the development of various elements. Here we shall attempt to show the relationship among the different grammatical constituents and subsystems discussed in this study. In order to demonstrate any systematic ordering of structures and functions in the process by which children learn Spanish as a second language, we present the following summary of the observed order of constructions:

(1) One-word and pivot-like constructions appear first, representing the initial stages of all grammatical subsystems analyzed in this study with the exception of embeddings. Development of NP, VP, imperative and interrogative constructions reflects a specification of objects and actions, as seen in the preliminary modification of nouns and expansion of imperatives to include adverbs and direct objects.

(2) Concurrent with early imperatives and other pivot-like structures are copula constructions. Such constructions, in which the copula form may be expressed or implied, are easily compounded by means of the coordinate conjunction y.

(3) Along with use of conjunctions, we find prepositions and other function words which are used in the formation of various types of phrases.

(4) The concept of post-position modification in NP develops in the functions of direct objects and predicates. This type of complementation may include adjectives with or without adverbial modification and prepositional phrases.

(5) The manipulation of direct and indirect object noun phrases leads to the concept of pronominalization, which is

observed in the simultaneous use of direct and indirect object pronouns.

(6) More intricate usage of verb constructions, including perfect, preterite and imperfect tenses, follows the use of the present indicative.

(7) The latest stage of development reflected in our data is represented by more complex types of modification, including prepositional phrases and the embedding of relative clauses.

Generally speaking, our results indicate that simple structures come first, and sequencing is governed by a progression in the number and complexity of components. Further linguistic development is reflected in increasing complexity of the combinations of structures from the various constituents and subsystems.

8.4 Research hypotheses

At this point we shall attempt to relate our findings to the hypotheses posited for different phases of our research. In our pilot study both our hypotheses were supported: Hypothesis A, that it was possible within the framework of transformational grammar to classify the utterances of American-English-speaking children learning Spanish as a second language, was demonstrated by our findings on the incidence of kernel and transformed sentence types. Our classification made it possible to substantiate Hypothesis B, which posited the existence of significant trends in the order of learning. This was borne out by the priority in the occurrence of base structures over those constructions involving transformations in the early recorded samplings of the speech of one child. With each sampling there was a gradual increase in the number and frequency of transformed sentences.

In our group study, a similar significant order of learning was anticipated in the recordings of four six-year-olds. Hypothesis C, that there is a significant difference in the incidence of base and transformed structures in the samples of children's language behavior at different time intervals, is supported in the recordings of our most productive six-year-olds, and even to some degree in the data of our least productive subject. Using our revised linguistic model (See Section 2.22), we found that short, simple utterances requiring few transformations predominated in the early recordings over those utterances requiring transformations of greater number and complexity.

Hypothesis D, which explored the significant difference in the incidence of base and transformed structures in speech samplings from individual to individual, has also been substantially upheld, especially in the output of our two most productive subjects, and in our least productive child. Our data shows sufficient conformity to the order of occurrence of structures anticipated: base structures requiring few transformations followed by more complex structures requiring a greater number of transformations. In addition to the general conclusion that base structures occur before transformed structures, we have suggested a hierarchy of structures and functions based on the results of our findings. At first all subjects show a predominance of simple one-word utterances and pivot-like structures which are followed by constructions that become progressively more complex. Various systems interact in the developmental process at the same time. There is concurrent growth and interaction among all systems, with embedding lagging behind the other grammatical constituents and subsystems. It is generally not until late in our sampling that we find such transformations as inversions, e.g. ¿Es ese el último día? In our least productive subject, we find that a major portion of his entire output consisted of simple, uninverted structures requiring a minimum of transformation rules.

8.5 Theoretical implications

Because of the high positive correlation among our four six-year-old subjects in the chronological order of their learning of structures and functions, there is reason to suspect that second-language learning under certain environmental conditions follows a systematic pattern of development. We consider highly significant the strategy by which children of a particular age combine structures using grammatical processes and devices that may conceivably be psycholinguistic universals available to all children of this particular age group. Furthermore, because of the similarities between the results of the four six-year-olds and those of the four-year-old, there is the implication that the learning of a second language may follow similar psycholinguistic rules within certain broad age limits, regardless of the specific age.

An important implication of our findings is that the process of second-language learning is similar to that of native-language acquisition. Certainly if other studies were to support the hypothesis that second-language learning follows systematic psycholinguistic patterns, then we would have reason to believe that the two

learning processes are similar. Also, we need data on the development of Spanish as a native language (Cf. Kernan and Blount 1966), for comparison with our findings on the learning of Spanish as a second language. As a result of preliminary studies, we have reason to suspect that there are indeed a great many underlying similarities in the psycholinguistic patterns of the two learning processes. However, we must point out that second-language learning involves a great deal more than an acceleration of the first-language-learning process.

Our study has significant implications not only for linguistic theory, but in the field of psychology as well. Just as in first-language acquisition, the child learning a second language must express his needs through communication with others. One-word or short pivot-like utterances, with an accompanying imperative or interrogative intonation if necessary, can supply the most basic of these needs. Thus, limited utterances of only one, two or three words may represent the beginning of the development of any of four aspects studied in this report: noun phrases, verb phrases, imperatives, and interrogatives. Embeddings, which may be considered an advanced form of modification, clearly follow the development of the other aspects of grammar discussed here. This does not mean that one aspect develops and is completed before another one begins. On the contrary, there is an intricate network of several subsystems and constituents developing at the same time. In effect, it is the interaction of these various aspects which represents development of linguistic competence. Increasingly complex grammatical constructions are the result of the learner's ability to specify just what it is that he needs.

The type of research discussed here is a first step toward description and prediction of the process of language acquisition, in what may be called a psycholinguistic grammar. Using a transformational model as a tool for more effective description, psycholinguistic research may provide insight for the refinement of present-day linguistic theory. Some of the utterances actually produced by our children correspond to intermediate steps in a transformational description of adult speech. This suggests a strong relation between descriptive linguistic theory and the developmental process of language acquisition. Thus the descriptive rules of a generative grammar may have psychological reality in a child's learning of a second language.

8.6 Suggested further research

There is no question that an urgent need exists for more studies on the learning of a second language in a natural environment. With our findings that certain linguistic structures develop similarly in children of both ages four and six, it is suggested that children of a wide variety of ages, say from one to fifteen, be studied. This would provide us with a clearer picture of the process of becoming bilingual. Furthermore, a comparison of these results with those obtained on the acquisition of Spanish as a native language would offer us much needed insight into the cognitive processes of language learning in general.

Rather than strive for objectives that are too global, further studies should concentrate on particular aspects of the language, such as individual constituents and subsystems. In delimiting the scope of the investigation, it would then be possible to go into greater depth in the analysis of as many facets of language development as possible. Little work has been done on children's ability to understand language. The approach here must be experimental (Fraser, Brown and Bellugi 1963; Shipley, Smith and Gleitman 1969), whereby investigators present especially prepared verbal and nonverbal stimuli in an effort to determine the child's linguistic competence at certain time intervals. A series of such delineated but comprehensive analyses of particular grammatical subsystems would reveal their interrelationships and their functioning within the given language as a whole.

The comprehensive research suggested for the learning of one language by persons of a particular native language background must be supported and compared with studies of a wide variety of other languages, especially those of non-Indo-European origin. Not only will studies on different target languages provide a broad perspective of the question of language universals, but also research on the acquisition of one particular target language by persons of a wide variety of native-language backgrounds will offer us another dimension in our understanding of the psycholinguistic mechanisms of second-language learning.

While it is important to make detailed studies of the linguistic and cognitive aspects of language learning on sufficiently large samples of children to insure that we are dealing with representative second-language learning behavior, we must also consider the myriad factors in the environment with which each individual learner relates. These facets of language development require that we investigate such essential aspects as language usage, attitudes and

other sociolinguistic factors within the community. We must also continue to refine our description of any possible interaction between the complex stimuli provided by the environment and the individual's language learning capabilities.

It is also desirable to explore the application of our findings to many of our most pressing practical needs. One such consideration is our formal school program on bilingualism, which involves a broad spectrum of highly complex problems. Analyses of environmental factors contributing to effective second-language learning can be adapted for programming in formal learning situations. This does not necessarily mean that a carefully prepared list of ordered structures should be spoon-fed to children in the classroom. More creativity is required! This area of research and experimentation suggests actual recreation of an optimal language learning environment providing children with adequate linguistic and nonlinguistic stimuli which would in turn permit them, through their natural language-learning faculties, to process the input and generate utterances according to their needs in communicating with others, just as children do in the acquisition of their native language and in the non-formal learning of a second language.

N O T E S

[1]A film produced in connection with the present study (Dato 1968) demonstrates the applicability of first-language-learning research techniques to the study of second-language acquisition. A research handbook (Dato, in preparation) will discuss in detail techniques useful for study of the development of a foreign language in children of various ages. The Field Manual (Slobin et al., 1967), which emphasizes the acquisition of native communicative competence, has some useful materials that may be adapted for second-language studies.

B I B L I O G R A P H Y

Ammons, R.B. and H.S. Ammons. 1958. Full range picture vocabulary test. New York, Psychological Test Specialists.

Bellugi, Ursula. 1965. The development of interrogative structures in children's speech. The development of language functions, ed. by K.F. Riegel. (Report No. 8.) Ann Arbor, University of Michigan Center for Human Growth and Development.

_____ and Roger Brown (Eds.). 1964. The acquisition of language. Monographs of the Society for Research in Child Development 29, 1. Lafayette, Indiana, Child Development Publications.

Berko, Jean. 1958. The child's learning of English morphology. Word 14.150-77.

_____ and Roger Brown. 1960. Psycholinguistic research methods. Handbook of methods in child psychology, ed. by P. Mussen. New York, Wiley.

Bever, T.G., J.A. Fodor, and W. Weksel. 1965. On the acquisition of syntax: a critique of 'contextual generalization.' Psychological Review 72.467-82.

Braine, M.D.S. 1963. The ontogeny of English phrase structure, the first phase. Language 39.1-13.

_____, In press. The acquisition of language in infant and child. The learning of language, ed. by C. Reed.

Brown, Roger W. 1957. Linguistic determinism and the part of speech. Journal of Abnormal and Social Psychology 55. 1-5.

_____, 1958. Words and things. New York, The Free Press of Glencoe.

_____ and J. Berko. 1960. Word association and the acquisition of grammar. Child Development 31.1-14.

_____ and C. Fraser. 1963. The acquisition of syntax. Verbal behavior and learning: problems and processes, ed. by C. N. Cofer and B. Musgrave. New York, McGraw-Hill.

_____ and Ursula Bellugi. 1964. Three processes in the child's acquisition of syntax. New directions in the study of language, ed. by Eric Lenneberg. Cambridge, Mass., M.I.T. Press.

_____. 1968. The development of WH questio[illegible] in child speech. Journal of Verbal Learning and Verbal Behavior 7.279-90.

Carroll, J.B. 1939. Determining and numerating adjectives in children's speech. Child Development 10, 4. Lafayette, Indiana, Society for Research in Child Development.

_____. 1960. Language development in children. Encyclopedia of educational research. New York, Macmillan.

_____. 1963. Research on teaching foreign languages. Handbook of research on teaching, ed. by N.L. Gage. New York, Rand McNally.

Chomsky, Noam. 1959. Review of verbal behavior, by B.F. Skinner. Language 35.26-58.

_____. 1964. Formal discussion. The acquisition of language, ed. by U. Bellugi and R. Brown. Monographs of the Society for Re[illegible]rch in Child Development 29, 1, 9-33.

_____. 1965. Aspects of the theory of syntax. Cambridge, Mass., M.I.T. Press.

Dato, D.P. 1963. Applications of programmed instruction to the teaching of Spanish. Paper given at NDEA Spanish Institute, University of Puget Sound, Tacoma, Washington.

_____. 1965. The child's learning of second language syntax in the foreign environment: a pilot study. Mimeographed.

_____. 1966. Una base psicolingüística para el estudio del aprendizaje de español por niños de habla inglesa. Filología Moderna. Madrid, Universidad de Madrid.

_____. 1968. Developmental psycholinguistics. 16mm. color film on research techniques.

_____. 1969a. Development of the verb phrase in children's learning of Spanish. Proceedings of the Second International Conference of Applied Linguistics, Cambridge, England, September.

_____. 1969b. Children's second language learning in a natural environment. Proceedings of the National Conference on Bilingual Education, University of Maryland, November.

_____. 1969c. Case study of a two-year-old English-Spanish bilingual child. Paper presented at Child Research Forum, Stanford University, August.

_____. In prep. Development of Spanish interrogatives in children's second-language learning. Paper given at Workshop on Language, Society and the Child, University of California, Berkeley, August 1968. More expanded version to appear in Ruth Hirsch Weir Memorial Volume, ed. by Vladimir Honsa and M.J. Hardman-de-Bautista.

_____. In prep. Handbook for research in children's language learning. Available 1970.

_____. In prep. Psycholinguistic techniques for testing the understanding of Spanish structure.

_____. In prep. Pivot-like constructions in second-language learning.

Dixon, T.R. and D.L. Horton, Eds. 1968. Verbal behavior and general behavior theory. Englewood Cliffs, Prentice-Hall.

Ervin, S., and C.E. Osgood. 1954. Second language learning and bilingualism. Psycholinguistics: a survey of theory and research problems, ed. by C.E. Osgood and T.A. Sebeok. Baltimore, Waverly Press.

_____. 1964. Imitation and structural change in children's language. New directions in the study of language, ed. by E.H. Lenneberg. Cambridge, Mass., M.I.T. Press.

Ervin-Tripp, Susan. 1967. Language development. Review of child development research, ed. by Lois and Martin Hoffman. Vol. 2. Russell Sage Foundation.

_____. 1968. Becoming a bilingual. Working paper no. 9, Language Behavior Research Laboratory, University of California at Berkeley, March.

Falk, Julia Sableski. 1968. Nominalizations in Spanish. Studies in Linguistics and Language Learning, Vol. V. Seattle, University of Washington Press.

Flavell, J. 1963. The developmental psychology of Jean Piaget. Princeton, New Jersey, Van Nostrand.

Fodor, J., and M. Garret. 1966. Some reflections on competence and performance. Psycholinguistics papers, ed. by J. Lyons and R.J. Wales, 135-54. Chicago, Aldine.

Fraser, C., U. Bellugi, and R. Brown. 1963. Control of grammar in imitation, comprehension, and production. Journal of Verbal Learning and Verbal Behavior 2.2, August.

Fries, C.C. 1952. The structure of English, an introduction to the construction of English sentences. New York, Harcourt, Brace & World.

Gardner, R.C., and W.E. Lambert. 1959. Motivational variables in second language acquisition. Canadian Journal of Psychology 13.1, March.

Gili y Gaya, S. 1960. Funciones gramaticales en el habla infantil. Publicaciones pedagógicas, Series 2, no. 24. Puerto Rico, Consejo Superior de Enseñanza de Puerto Rico.

_____. 1961. Curso superior de sintaxis española. Barcelona, Spes.

Gumperz, J.J. 1967. On the linguistic markers of bilingual communication. The Journal of Social Issues, Vol. XXIII, No. 2.

Hunt, K.W. 1965. Grammatical structures written at three grade levels. NCTE Research Report No. 3. Champaign, Illinois, National Council of the Teachers of English.

Ingram, David. 1968. An approach to writing grammars for child language. Working paper no. 1, Summer Study Program, Scottish Rite Institute for Childhood Aphasia at Stanford University, August.

Jacobs, Roderick A., and Peter S. Rosenbaum. 1968. English transformational grammar. Waltham, Mass., Blaisdell Publishing Company.

Jakobovits, L.A., and M.S. Miron, Eds. 1967. Readings in the psychology of language. Englewood Cliffs, Prentice-Hall.

Kahane, M.R., and S. Saporta. 1958. Development of verbal categories in child language. Indiana University, Bloomington, Research Center of Anthropology, Folklore and Linguistics.

Katz, J.J., and P.M. Postal. 1964. An integrated theory of linguistic descriptions. Cambridge, Mass., M.I.T. Press.

Kernan, K.T., and B.G. Blount. 1966. The acquisition of Spanish grammar by Mexican children. Anthropological Linguistics 8.1-14.

Kinzel, P.F. 1964. Lexical and grammatical interference in the speech of a bilingual child. Monograph Series, Studies in Linguistics and Language Learning. Seattle, University of Washington.

Klima, S., and U. Bellugi. 1966. Syntactic regularities in the speech of children. Psycholinguistics papers: the proceedings of the 1966 Edinburgh Conference, ed. by J. Lyons and R.J. Wales, 183-208. Chicago, Aldine.

Lambert, W.B. 1955. Measurement of the linguistic dominance of bilinguals. Journal of Abnormal and Social Psychology 50.197-200.

Lane, H. 1962. Some differences between first and second language learning. Language Learning XII.I.

Lenneberg, E.H. 1962. Understanding language without ability to speak: a case report. Journal of Abnormal and Social Psychology 65.6.419-25.

_____. 1967. Biological foundations of language. New York, Wiley.

Leopold, W.F. 1939-47. Speech development of a bilingual child: a linguist's record. 4 vols. Evanston, Ill., Northwestern University Press.

_____. 1953-54. Patterning in children's language learning. Language Learning V.1-14.

_____. 1964. Review of language in the crib, by R. Weir. Language 40.269-73.

Lewis, M.M. 1957. How children learn to speak. London.

Lindquist, E.E. 1956. Design and analysis of experiments in psychology and education. Cambridge, Mass., The Riverside Press.

Livant, W.P. 1962. Productive grammatical operations: I, the noun compounding of 5-year-olds. Language Learning XII.1.

MacCorquodale, K. 1970. On Chomsky's review of Skinner's verbal behavior. Journal of the Experimental Analysis of Behavior 13.83-99.

McNeill, D. 1965. Some thoughts on first and second language acquisition. Mimeographed paper.

_____. 1966. The creation of language by children. Psycholinguistics papers, ed. by J. Lyons and R.J. Wales. Chicago, Aldine.

_____. 1966. Developmental psycholinguistics. The genesis of language: a psycholinguistic approach, ed. by F. Smith and G.A. Miller. Cambridge, Mass., M.I.T. Press.

Menyuk, P. 1963a. Syntactic structures in the language of children. Child Development 34.2.407-22.

_____. 1963b. A preliminary evaluation of grammatical capacity in children. Journal of Verbal Learning and Verbal Behavior 2.5-6, December. New York, Academic Press.

_____. 1964a. Alternation of rules in children's grammar. Journal of Verbal Learning and Verbal Behavior 3.480-88.

_____. 1964b. Syntactic rules used by children from preschool through first grade. Child Development 35.533-46.

_____. 1969. Sentences children use. Cambridge, Mass., M.I.T. Press.

Miller, W., and Ervin, S. 1964. The development of grammar in child language. The acquisition of language, ed. by U. Bellugi and R. Brown. Monographs of the Society for Research in Child Development 29.1. Lafayette, Indiana, Child Development Publications.

Minnesota scale for paternal occupation. 1950. Minneapolis, University of Minnesota Institute of Child Welfare.

Morrison, J.C. 1958. The Puerto Rican study, 1953-57. New York, City of New York Board of Education.

Nida, E.A. 1956-57. Motivation in second language learning. Language Learning VII.

Nostrand, H.L. 1962. Research on language teaching: an annotated bibliography for 1945-1961. Seattle.

Osgood, C.E. and T. Sebeok (Eds.). 1954. Psycholinguistics: a survey of theory and research problems. Baltimore, Waverly.

_____. 1963. Language universals and psycholinguistics. Universals of language, ed. by J.H. Greenberg. 2nd Ed. Cambridge, Mass., The M.I.T. Press.

Piaget, Jean. 1948. Le langage et la pensée chez l'enfant. Paris.

Popova, M.I. 1958. Grammatical elements of language in the speech of pre-school children. Voprosy Psikhol. 3.106-07.

Pottier, B. 1964. Introduction à l'étude de la morpho-syntaxe Espagnole. 3rd Ed. Paris, Ediciones Hispano-americanas.

Ravem, Roar. 1968. Language acquisition in a second language environment. IRAL VI.2.175-85.

_____. 1970. In quest of the hypothetical intermediate: the development of Wh-questions in the speech of children. Unpublished paper, January.

Rivers, W.M. 1964. The psychologist and the language teacher. Chicago, University of Chicago Press.

Rosenberg, S. (Ed.). 1965. Directions in psycholinguistics. London and New York, Macmillan.

Samarin, W.J. 1967. Field linguistics: a guide to linguistic field work. New York, Holt, Rinehart and Winston.

Seco, R. 1963. Manual de gramática española. Madrid, Aguilar.

Shipley, E.F., C.S. Smith, and L.R. Gleitman. 1969. A study in the acquisition of language. Language 45 2.322-42.

Slobin, D.I. 1966. The acquisition of Russian as a native language. The genesis of language: a psycholinguistic approach, ed. by. F. Smith and G.A. Miller. Cambridge, Mass., M.I.T. Press.

_____ (ed.). 1967. A field manual for cross cultural study of the acquisition of communicative competence. Berkeley, University of California Press.

_____. 1968. Early grammatical development in several languages with special attention to Soviet research. The structure and psychology of language, ed. by W. Weksel and T.G. Bever. New York, Holt, Rinehart and Winston.

Stevens, Claire E. 1966. A characterization of Spanish nouns and adjectives. Studies in Linguistics and Language Learning, Vol. II. Seattle, University of Washington Press.

Stockwell, R.P. and J.D. Bowen. 1965. The sounds of English and Spanish. Chicago, University of Chicago Press.

_____, J.D. Bowen, and J.W. Martin. 1965. The grammatical structures of English and Spanish. Chicago, The University of Chicago Press.

_____, J.D. Bowen, and I. Silva-Fuenzalida. 1956. Spanish juncture and intonation. Language 32.641-65.

Thornhill, D.E. 1969. A quantitative analysis of the development of syntactical fluency of four young adult Spanish speakers learning English. Unpublished Ph.D. Dissertation, Florida State University.

Von Engel, Walburga. Some research suggestions on first and second language acquisition. Mimeographed paper.

Wales, R.J., and J.C. Marshall. 1966. The organization of linguistic performance. Psycholinguistics papers, ed. by J. Lyons and J.R. Wales, 29-80. Chicago, Aldine.

Weinreich, Uriel. 1953. Languages in contact. New York, Publications of the Linguistic Circle of New York.

Weir, Ruth. 1962. Language in the crib. Gravenhage, Mouton & Co.